



**“Did you hear  
what the  
CEO said  
yesterday?”**



# "He said we should

**Get your Infrastructure ready for anything.** You've got relentless hackers, massive usage spikes, 24/7/365 demands, big CEO requests, etc., etc., etc. What is going on here? This, of course, is today's unpredictable business environment. In this environment, where \_\_\_\_\_ can happen at any moment, you need to keep your infrastructure prepared for anything and everything. And that is exactly what the Microsoft® platform is designed to help you do. Here's how:

## Security

**The Microsoft platform helps provide the secure infrastructure that enables confident computing in a dynamic Internet-enabled environment.**

The Microsoft platform enables high levels of security through built-in encryption, authentication, and access control that can be centrally managed and integrated. In addition, it helps protect sensitive data and applications by securing your network perimeter against attacks and unauthorized use.

## Manageability

**The Microsoft platform allows you to build and maintain a technology infrastructure that is reliable, cost-effective, and easily modified to meet changing business needs.**

Microsoft Systems Management Server 2.0 provides comprehensive hardware and software inventory, enterprise software distribution, remote control, and software metering for Microsoft Windows®-based desktops and servers. Microsoft Active Directory® service and Group Policy features in the Windows 2000 Server family simplify management of users and devices. Microsoft Operations Manager 2000 provides enterprise-class event and performance management. And Microsoft Application Center 2000 makes the management of Web server farms as simple as managing a single server.

The level of availability depends on many factors, including the operating system, networking, the hardware and software components, network, external applications, software, and professional services. © 2000 Microsoft Corporation. All rights reserved. Microsoft, Windows, and Active Directory are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

”

#### Interoperability

**The standards-based technologies in the Microsoft platform work with your existing infrastructure, support future technology investments, and leverage your investment in the skill sets of your current staff.**

The Microsoft platform can enable communication with other operating systems, including UNIX, NetWare, and IBM-based systems, using common protocols. It can also access file shares and printers on other platforms, integrate new applications with existing data sources, and reduce the burden of administering multiple systems. And XML-enabled Microsoft BizTalk® Server 2002 even allows you to orchestrate business processes and applications across organizational boundaries.

#### Reliability

**With the right investments in people, processes, and the technology of the Microsoft platform, you can achieve the highest levels of reliability you need to run your business.**

The Windows 2000 Server family delivers up to 4-node clustering and 32-node load balancing to support mission-critical applications and solutions. Features like these, along with established best practices and support from Microsoft's industry partners (including fault-tolerant systems vendors), allow customers to build solutions that provide up to 99.999% service availability.\*

#### Scalability

**The Microsoft platform scales to handle your most demanding workloads.**

The Microsoft platform gives you the choice of thinking bigger, smaller, up, or out, with the lowest price-to-performance ratio of any competitive platform.<sup>1</sup> You can deploy Microsoft SQL Server™ 2000 on Windows 2000 Datacenter Server for heavy-duty ERP and transaction processing, and scale up to support terabytes of data and millions of transactions. Or scale out with Application Center 2000 by adding clusters of Windows 2000-based servers running distributed applications. Either way, the scalability you need is there.

For more information on how to prepare your infrastructure for \_\_\_\_\_, and \_\_\_\_\_, visit [microsoft.com/enterprise](http://microsoft.com/enterprise). **Software for the Agile Business.**





*Microsoft*

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For the tech crowd:

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That's why there's BrightStor from Computer Associates (CA). The most comprehensive family of storage solutions on the market, BrightStor solutions are completely and totally open. Which means that unlike most vendors, who are focused solely on their individual solutions, BrightStor brings multi-vendor systems and the environment together seamlessly.

What does this mean for you? It means optimization of resources across all platforms and storage types. It means a greater understanding of your storage resources and how to best allocate them to fit your needs. And it means a lower total cost of ownership.

Specifically, BrightStor provides you with unparalleled data protection, real-time data availability, and the ability to view, manage, and monitor your resources from a central location. And BrightStor is the only software of its kind that incorporates CA's portal technology—the leading portal solution on the market.

Why rely on Computer Associates? Because we're a completely independent software company with over 25 years of experience. That's how we got to be the software management experts. And that's why 99% of the Fortune 500® rely on our software.

We know that storage is no longer just backing up what you already have. It's facilitating integration with every aspect of your entire eBusiness. It's leveraging all of your existing capabilities to maximize your resources enterprise-wide. And, most important, it's using what you have to find future opportunities and capitalize on them.

For everybody else:

Reliable = Good.

Unreliable = Bad.



Computer Associates™

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# COMPUTERWORLD THIS WEEK

## NEWS

4

**4 J.D. Edwards** is moving quickly to integrate the CRM software it bought last fall with ERP and supply chain applications.

**5 Two vendors** announce add-on software tools for making instant messaging systems more secure.

**6 IT budgets** may be tight, but a Gartner report claims that companies are wasting money by not managing their technology assets more effectively.

**10 IBM and Sun** are separately putting together integrated sets of development tools that will support their middleware products.

**12 The Bush administration** wants to see changes at ICANN before deciding whether to extend its contract to run the Internet Domain Name System.

### OPINIONS

Maryfran Johnson 20  
Pam Fox 20  
Dan Gillmor 21  
Frank Hayes 26  
Letters 51

How to Contact CW 54  
Company Index 56  
Shark Tank 56

## ONLINE

### UCTTA? No Way!

Two members of our online communities don't mind words when asked if they might support a watered-down version of the UCTTA software licensing law. [QuickLink: a2190](#)

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[www.computerworld.com](http://www.computerworld.com)

## KNOWLEDGE CENTER: E-BUSINESS



### 23 E-Commerce Grows Up

**CONSUMER NOTE:** E-commerce isn't glamorous or new anymore — and that's a good thing. Now the focus is on back-office integration, usability, ROI and building trust. In other words, it's just plain commerce.

**24 The Story So Far** Amazon.com and other e-commerce ventures are based on principles developed by the FTD florists' network and the Berlin Airlift.

**26 E-Retailing 2.0** During the next two years, Web merchants will focus on back-office integration as well as making sites more helpful and credible.

**ONLINE:** An IT executive at TV shopping channel QVC discusses the ups and downs of online shopping technology. [QuickLink: 30027](#)

**32 Building 828 Trust** Users are turning to new services to make sure they're dealing with legitimate businesses online. **ONLINE:** Users look to online exchanges for trusted partners. [QuickLink: 30029](#)

**36 Opinion:** What will the next generation of e-business look like? Observe the activity in the data center, says columnist Kevin Fogarty.



**37 Slowpoke!** For companies that don't have tech-savvy competitors hot on their heels, a slow and steady e-commerce strategy can mean significant cost savings. **ONLINE:** The cost of merchandise shipping or added staff can make e-commerce an unprofitable fit for some businesses. [QuickLink: 30720](#)

**38 ROI:** The same technology that tracks individual customer preferences is increasing inventory turns and revenue at sporting goods retailer Cabela's Inc.

**ONLINE:** How Cabela's.com integrates a variety of technologies to re-create online the customer experience that shoppers get in stores and from the catalog. [QuickLink: 30245](#)



**40 Field Report:** Commerce server offerings are being replaced by more specific systems as e-commerce goes mainstream.

**ONLINE:** Read a Q&A with Sean Wiley at Electronic Data Systems, who thinks that personalization is overrated and that portals are more useful. [QuickLink: 30036](#)

**42 QuickStudy:** Web site traffic is measured in a variety of ways, including the analysis of server logs, user tracking and outside measurement services.

**ONLINE:** For more on Web site traffic tools. [QuickLink: 30076](#) Cookie, anyone? Everyone knows about cookies. Or do they? [QuickLink: 30254](#)

**43 Fast Answers** Here's a look at how KIDtoys.com and Drugstore.com respond quickly to customer e-mail. **ONLINE:** Instant messaging, or chat support, is a low-cost alternative to e-mail. But turning phone agents into chat agents has its hurdles. [QuickLink: 30038](#)

**44 How to Stop Web Shopper Flight** The average e-commerce site gets shoppers to buy less than half the time. Web site design gurus say usability testing can help bring profitability up.

**ONLINE:** E-commerce sites that don't accommodate international shoppers may be throwing away half of their potential sales. [QuickLink: 29882](#) PARC researchers say online users follow an "information scent" to find what they want. [QuickLink: 29891](#)

**48 Opinion:** Columnist Nicholas Petreley offers his guidelines for a successful e-business strategy.



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### IN HAND CREATES TWO BIG LINKS

The satellite radio service has built strong e-business ties with electronics retailers to make sure it's easy for them to sell XM radios. [QuickLink: 30098](#)

### WHAT IT TAKES TO BUILD UP

Q&A: IBM's Wily Chin discusses the scalability issues of very high-volume Web sites — such as eBay — that reach upward of 30 million customers. [QuickLink: 30092](#)

### SECURING-UP E-COMMERCE

Case studies: Sprint moves toward paperless payments to supplement the Shop At Home TV network; offers Web specials when phone lines are jammed. [QuickLink: 30092](#)



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Case studies: Sprint moves toward paperless payments to suppliers; the Shop At Home TV network offers Web specials when phone lines are jammed. [QuickLink: 30022](#)

## AT DEADLINE P&G Sets Business, IT Outsourcing Plan

Praeger & Gendle Co. confirmed that it plans to outsource many of its back-office business functions and related IT operations with a deal by year's end. The Cincinnati-based consumer goods maker said the move would include IT and help desk services that support the business activities being outsourced. P&G added that it has yet to pick an outsourcing vendor.

## Peregrine Gets Loan, Sells Off B2B Unit

Peregrine Systems Inc. said it got a \$50 million loan as part of an effort to improve its financial position following the discovery of accounting errors last month. San Diego-based Peregrine also has agreed to sell its business-to-business software unit to San Francisco-based Golden Gate Capital Inc. That operation was put up for sale in March (CWI:Link 27808).

## Denmark Declines Review of Microsoft

The Danish government said it won't ask the European Commission to review Microsoft Corp.'s planned acquisition of Denmark's Mediaset A/S, a developer of applications for small and mobile computers. The Sage Group PLC, a rival of Mediaset based in England, sought a review after the deal was announced last month (CWI:Link 27808).

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# J.D. Edwards Pushes CRM, ERP Integration

Call center, sales tools tie into back-office  
software; supply chain links due in fall

BY MARC L. BORRINI  
DENVER

J.D. EDWARDS & CO. last week announced a series of enhancements to its business applications and detailed work it's doing to integrate customer relationship management (CRM) applications it bought last fall—an effort that was applauded by users who did their own integration in the past.

At its Focus 2002 user conference here, J.D. Edwards introduced upgrades of the enterprise resource planning (ERP) and supply chain management applications in its suite, which was renamed J.D. Edwards 5 last month. The company also said it plans to

add support for Web services technology (see box at right).

But one of the hottest topics at the conference was the ongoing integration of the CRM software that J.D. Edwards acquired through its purchase of Charlotte, N.C.-based YouCentric Inc. in November.

J.D. Edwards said it has already tied some of its ERP applications to YouCentric's call center and sales force automation

tools. The integration of the CRM software in due to be extended to other back-office modules and the company's supply chain technology starting in September.

Mich Myers, vice president of operations at FWMurphy in Tulsa, Okla., said the tight inte-

gration plans are so appealing that the maker of industrial gauges and switches is ripping out an installation of Siebel Systems Inc.'s CRM applications and replacing them with the J.D. Edwards software.

### Don't Wag the Dog

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That would have forced the company to hire a consultant to develop a customized interface, Myers said. Using ERP and CRM applications that have been tied together by J.D. Edwards should reduce the potential for interface-related problems when FWMurphy does upgrades, he added. "We feel ERP is the dog, and we don't want to let the tail wag the dog," Myers said.

Fleetwood Enterprises Inc., a maker of recreational vehicles and mobile homes in Riverside, Calif., built its own connectors between Siebel's software and its back-end systems, said Fleetwood CIO Todd Inlander.

Fleetwood runs J.D. Edwards' ERP applications in some business units and plans to migrate over the next two years to J.D. Edwards 5 for its corporate systems, which now use a mix of homegrown code and applications from Lawson Software Inc. in St. Paul, Minn. But Fleetwood will keep its Siebel installation because of the money it invested in that software, Inlander said.

J.D. Edwards CEO Bob Dethlefsen said Denver-based company initially partnered with San Mateo, Calif.-based Siebel because it's the CRM market leader. But J.D.

## The Focus of Focus

J.D. Edwards announced the following products at its Focus user conference:

■ **ERP 5.0**, an ERP upgrade with new functions for managing projects, human resources, corporate assets and real estate holdings.

■ **Advanced Planning 4.3**, updated supply chain software with a new production optimization module and a build-up collaborative forecasting tool.

■ **Phase II support for CRM applications on Linux-based servers from IBM**, initially for companies in the financial services industry.

■ **Web-based portal software** that lets manufacturers collaborate electronically with their suppliers and other business partners.

■ **Support for Web services technology** such as the Universal Description, Discovery and Integration directory and the Web Services Description Language.

Edwards decided to buy YouCentric after it had trouble integrating its applications with Siebel's software, he added (see box at left).

Siebel "was the wrong product for J.D. Edwards" because of the latter company's focus on midsize users, said Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Daly City, Calif.

The YouCentric software looked to be a better fit with J.D. Edwards' installed base, he said.

J.D. Edwards lost \$179.8 million in the fiscal year that ended in October but returned to profitability in its latest quarter. Greenbaum said the company appears to be moving out of turnaround mode and making progress in positioning itself as a customer-focused vendor. "They're not ramming too much technology down users' throats," he said. ■

### APPLICATION AWARE

For additional coverage of business applications, head to the Supply Chain ERP Knowledge Center on our Web site.

CPW Knowledge Center on Web site  
www.computerworld.com

## New Man in Town

Q&A

Bob Dethlefsen, J.D. Edwards' chief executive and CEO of J.D. Edwards last year, has written with Computerworld last week about some of the key issues he's facing with the company.

Q: As efforts to launch into the CRM market often include acquiring Siebel's applications, "We learned about Siebel... We learned it was really two angles: a tool to improve productivity for the customer, the Siebel 'YouCentric' interface, and the Siebel 'Advanced Planning' module. We learned that J.D. Edwards should not acquire Siebel, but rather, we should acquire the Siebel 'YouCentric' interface and the Siebel 'Advanced Planning' module."

Q: "J.D. Edwards' competitive advantage is its people and its customers, and they live from multiple sources. Our strategy has been to let that mix our strategy grow by one. You could see our sense of urgency around the acquisition of J.D."

Q: "The historical changes have been made at J.D. Edwards. I have asked the company to do three things. We've tightened up our focus into segments—product areas and industry verticals. But, I don't think we've done it systematically enough. The third thing is to let them be the only thing with access to users."

Q: "The greatest challenge and opportunity is to build a strong relationship with our customers. We have a strong relationship with our customers, but we need to build a strong relationship with our customers."



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## APPLICATIONS

### New Man in Town



Bob Dutkowsky took over as chairman, president and CEO of J.D. Edwards this year. He spoke with Computerworld last week about some of the key issues he's dealing with at the company.

On its efforts to break into the CRM market after initially reselling Siebel's applications: "We learned about Siebel. . . . We learned it was really too complex a tool to integrate and deploy in the marketplace. We bought YouCentric in November, and by December, it was more integrated with J.D. Edwards than we could get trying. Since we closed the acquisition, we've announced three versions [of the CRM applications], and each has been more integrated than the one before."

On J.D. Edwards' competition: "SAP, Oracle and Microsoft are real competitors, and they take these markets seriously. Our strategy has got to be that we are quicker than they are. You could see our sense of urgency around the area of CRM."

On the internal changes he has made at J.D. Edwards: "I have asked the company to do three things. We've tightened up our focus into segments—product areas and industry verticals. Second, I asked them to dramatically improve execution. The third thing is I asked them to do everything with a sense of urgency."

On product development and marketing: "Before, I think we built products and stuck them out into the market. Now, what we are doing is listening to customers to tell us what to do and then delivering on that very quickly."

—Marc L. Sondrik

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### APPLICATION-AWARE

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QuickLink: K2000

www.computerworld.com

## New Software Aimed at Making IM Secure

Corporate users are targets of releases

BY JENNIFER DISABRATO

Two San Diego-based companies, Akonis Systems Inc. and WiredRed Software Corp., announced new instant messaging (IM) software add-ons last week that make the chat tool more secure, according to industry experts.

WiredRed announced its e/pop Audit and Reporting Server, targeted at financial services companies. It allows users to provide security by storing and monitoring the content of all IM communications. It's also used behind the firewall, which solves most security problems. Beta customer Terra Nova Trading LLC in Chicago uses the software to broadcast financial news via IM, according to David Lipsitt, vice president of the firm's on-line division.

While financial services firms were among the first companies to deploy IM, companies in other industries have hesitated to install the technology, in part because it's not secure. Overall, only about 30% of companies have deployed IM in the U.S., according to IDC in Framingham, Mass., and Osterman Research Inc. in Black Diamond, Wash.

However, as IT managers have stalled on implementing IM, employees have gone ahead and downloaded the client software for free from companies such as America Online Inc. in Dulles, Va., and Microsoft Corp.

### Bypassing Security

Recent studies from IDC and Osterman indicate that 70% to 80% of companies report that their employees have downloaded IM software such as AOL Instant Messenger (AIM) and Microsoft's MSN Messenger.

The problem with those products is that they evade most common security practices by opening unsecured

firewall ports for a connection. They also commonly lack virus scanning, allow file transfers and have no corporate-based user authentication, according to Ferris Research Inc. in San Francisco.

So installing secure IM software like WiredRed now may not solve all those security concerns because the free consumer IM clients, with all their security problems, are so widely deployed.

However, the release last week of Akonis 17 firewall software addresses this problem without requiring IT staff

to visit every PC and reconfigure the IM software, according to Dmitry Shapiro, Akonis's chief strategy officer.

Akonis 17 allows systems administrators to restrict outside-the-firewall access from IM clients, or block it altogether, Shapiro said.

The administrators can also authenticate corporate employees' IM identities by linking them to their identities in Microsoft's Active Directory, he added. The software also routes messages and attachments through antivirus software and has a feature that forces the archiving of messages, depending on how it is configured by the user.

FaceTime Communications

## IM Security Software

The list of vendors that provide IM security products is growing. It includes:

**FIREWALL SOFTWARE**  
Akonis Systems Inc., San Diego

**Instant Systems**, Stockholm

**IM CLIENT AND SERVER SOFTWARE**  
Divine Inc., Chicago

**FaceTime Communications**  
Inc., Foster City, Calif.

**Kimble Inc.**, Herndon, Va.

**Jalisco Inc.**, Denver

**Latus Software Group**,  
Cambridge, Mass.

**WiredRed Software Corp.**,  
San Diego

Inc. in Foster City, Calif., also provides many of these same features with its IM security software, but Akonis can do all this with peer-to-peer software, as well, like Gnutella, said Michael Sampson, an analyst at Ferris Research. The fact that Akonis can, out of the box, integrate with the Windows architecture via Active Directory might give MSN Messenger some viability within the enterprise, Sampson said.

Akonis CEO Peter Shaw said the product will be compatible with directory protocols such as Lightweight Directory Access Protocol by year's end.

## AOL GOES CORPORATE

AOL plans to announce a version of its AIM software for business users this summer.

QuickLink: 30578  
www.computerworld.com

## Bottom Line Hit Hard by Need To Fend Off Spam and Viruses

But in Europe, privacy rules may give protection

BY JENNIFER DISABRATO

The intrusion of viruses and spam on corporate networks has grown from an annoyance to a costly problem in the U.S., even forcing companies to double up on prevention. In Europe, however, privacy protections may be limiting the spam problem.

Alan Pawlak, security manager at Aetna Inc., is currently installing antivirus and anti-spam software from Tokyo-based Trend Micro Inc. The Hartford, Conn.-based insurer is already monitoring e-mail with competitive software from Cupertino, Calif.-based Symantec Corp. and will continue to do so, but it's adding Trend Micro's InterScan application for extra protection.

"Our belief is that most security products fail eventually,

in some way. But when they do, they don't [all] fail in the same way," Pawlak said. A second gateway antivirus product was a "no-brainer," he said.

In Europe, stricter privacy guidelines prohibit publishing and collecting personal information, such as e-mail addresses, without the explicit permission of the individual. That may help cut down on the problem, users there say.

Dietrich Schneider, director of technology operation and strategic global integration at

DaimlerChrysler AG in Stuttgart, Germany, said he seldom sees unsolicited commercial e-mail and that's probably because of privacy rules.

"I've never had any of that e-mail myself," said Ben Krutzner, information management manager at Royal Dutch/Shell Group of Cos. in Amsterdam.

Most firms won't enumerate the costs of spam and virus attacks, but studies indicate they are high, at least in the U.S.

Raymond Huff, president of Trans Pacific Stores Ltd. in Lakewood, Colo., said he knew of the cost firsthand. He was forced to take down his network for a day and a half last month after spammers began using him as a relay after that. Huff deleted all of Trans

Pacific's active e-mail accounts and renamed them so that spam would bounce.

Pawlak is also considering even more software that would sit in the in the "demilitarized zone" of Aetna's network to block spam and prevent his servers from becoming a relay for spammers.

In a March report, ICSA Labs in Mechanicsburg, Pa., said that only 32 companies of 300 it surveyed were willing to discuss the cost of a virus infection, even anonymously. Among those that did respond, the estimated cost of infections ranged from \$100 to \$1 million. ICSA Labs' own prevention division of TruSecure Corp. in Herndon, Va., sets baseline criteria for security vendors.

According to Ferris Research Inc. in San Francisco, the annual cost of viruses to corporations is at least \$6 billion. Spam attacks are less expensive, said company president David Ferris.

Although Aetna relies on information like this to evaluate the threat of viruses, it also conducts reality-checking in-house by running analysis on captured viruses to see what effect they would have had on its systems, Pawlak said.



Continued from page 1

## Ballmer Q&amp;A

**Is your company's customer connection what you are going to do to make more money happen?** To reinforce things through the management process. That's all you can do. Every time you sit down with people, you ask them, "How are you doing?" and "What are your plans?" And then six months later, "Did you get accomplished what you said you were going to get accomplished?" Is it ambitious enough relative to what customer expectations are? Is it ambitious enough relative to competition? At the end of the day, it's the same kinds of things that determine success. You know, broad customer connection. ... We could be better connected with our customers without a doubt.

**By what metrics will you gauge the merger's effectiveness?** The sharing of good ideas and the competition amongst groups; it's the best metric, as opposed to "Here's a number." There'll be some numbers that are useful. I mean, we measure customer satisfaction in 66 different ways. ... But the measurements are probably less interesting than the best practices which we will share.

**Do you hope the merger will help the company avoid future problems with the government?** There's nothing in the merger that, quite, should help us avoid problems with the government. ... I think the thing that is important is we have reached a settlement with the U.S. Department of Justice which provides a clear framework in which we can operate.

**What's the biggest difference between Microsoft today and Microsoft five years ago?** Externally, which is very important, I'd say the level of customer expectation is much higher in any way you want to say, whether it's reliability and trustworthiness, ... innovation. ... The level of expecta-

tion in almost every sense. I think, is higher today than it was five years ago.

**If you look at the ways we're different internally, we've recognized and we are responding to that level of expectation.** Whether it's in direct-to-customer-facing things or the innovation which feeds the customer, we're ratcheted those investments up with an eye toward this increased sense of expectation.

**Five years ago, if you'd asked me, I would have spent a lot of time talking about ... what businesses [we] aren't going to be in. That was always a question we'd get. And I was always trying to answer it. I don't try to answer it anymore.**

**You figure the doors are open to be in any business?** Yeah. We're basically a software company. We help people realize their potential through software. But I don't want to be limiting. I don't want to limit the way our people think about how they can add value. I don't want to create any kind of expectation amongst anybody else that we will limit, if we have good ideas and we think we can make a contribution.

**What new areas of the enterprise software space might Microsoft enter?** Areas in which we think we have innovative ideas that can make a difference. ... Will security be different tomorrow than it is today? Yes, it will, because now we have to secure an XML infrastructure, if you will, as opposed to an HTML infrastructure. Everything about the way security works needs to change. You start passing XML messages around, it's not enough to just put a firewall out there and say, "I'm done." It's a set of work, and we think we have some unique ideas to add value. ... Some of those we may pursue, all with our own technology. Some of those we may pursue in partnership.

**Take storage. How are we going to support SANs?** Where do the interfaces come between the operating system and the storage systems? And what's our relationship to the

storage community? And how will it evolve? Well, we're talking to EMC today, and we're talking to Compaq — or HP, I guess I should have to say — about that. And we're trying to find the right place for us to add value in the right ways.

**Given the very close relationship you've had with Compaq, what's your perspective on the HP/Compaq merger?** We have a great relationship with the merged company. As a matter of fact, Carly [Florini] and Michael [Capellas] were here two days ago, something like that. The two companies talk frequently. ... I think HP will be a very



We have low market share of what I would call the dot-com funny money.

STEVE BALLMER, MICROSOFT

important partner for us. I think those guys have sets of very ambitious goals for themselves. And we want them and need them to succeed. We talked mostly about what we're going to do together.

**Did any action items result from the meeting?** Sure. But it's inappropriate to go through them. There's plenty of things that we're working on together that are exciting, and we have plenty of interesting things with any of our big partners, whether it's HP, Dell, Accenture.

**Do you think the merger's a positive development for the industry?** As the new HP executives well, it'll be a good thing for the new HP and therefore a good thing for the industry. It's a hard execution challenge, and I have a lot of respect for Carly and for Michael to step up to that kind of challenge. I'm not sure I would have had the *je ne sais quoi* they've got for that kind of tough challenge. But they're sure fired up by it.

**How has your view changed over the past five years of the corporate IT profession?** Obviously, CIOs are important. Senior IT, the real implementers, are important as well. If you actually ask who will make the decision in the average enterprise IT shop about the way to build the next application, the CIO will ultimately give his or her imprimatur to the decision.

But there's some implementer, a technical architect, a smart person who's well regarded in the organization who's really going to study it. They're going to take a look at .Net. They're going to look at the alternatives, and they're going to make the real decision about what to do. So in a sense, relative to the enterprise, a lot of the key decisions about our servers, tools, management infrastructure, it's going to be at the level you described, as opposed to the CIO level.

**Those people left a lot less important during the dot-com years because everything was so fast moving. Were you making a lot of the decisions. Do you see that difference now in**

**your customer base?** I never bought into that. That doesn't mean we didn't do some selling that way. But in some senses, you could say it shows. We have low market share of what I would call the dot-com funny money. ... It was basically money that went from investors and venture capital guys into companies and then went back into IT vendors. And part of the reason why IT sales have fallen apart is because the funny money funneled out of the market.

**If you look and say, "Who had the highest share of funny money?" It was the four horsemen of the Internet. ... EMC, Cisco, Oracle and Sun. The four horsemen were the guys who had the high market share of funny money. We did not.**

**What do you attribute the fact that you weren't one of those four?** First of all, money wasn't an object. And we've always appealed to the value buyer, shall we say. ... Some of the initial Web implementations happened on Unix systems, which gave sort of an extra boost particularly to Sun and Oracle. And, OK, we didn't have high market share. But it meant we never took our eye off the ball with the core IT people. That's always been kind of our bread-and-butter audience.

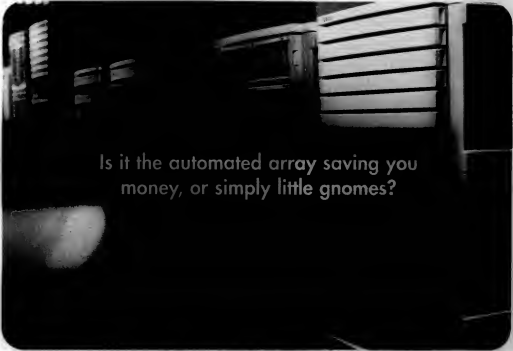
**Do you need to change your image with those people?** The companies over time that that community can view as providing real trustworthy computing will be companies that have a real leg up. I want to be pre-eminent in terms of that community's view. ... Our heritage is perhaps innovation, new features, etc. ... But we will be a leader amongst that community ... being a trustworthy company and providing a trustworthy computing platform for them. We've set that out as an absolute goal. ☐

## DELIVING DEEPER

For the complete version of this Q&A with Steve Ballmer, visit our Web site. [www.microsoft.com/qanda/c2880](http://www.microsoft.com/qanda/c2880)

Find Ballmer's company name online. [www.computerworld.com](http://www.computerworld.com)





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## BRIEFS

## Lucent Says Sales To Drop Off in Q3

Lucent Technologies Inc. said revenue for its third quarter, which ends this month, will likely drop 10% to 15% from the \$3.52 billion the struggling company reported for its second quarter. Murray Hill, N.J.-based Lucent previously had declined to issue a revenue forecast for the current quarter because of uncertainty in the telecommunications equipment market.

## Head of California IT Spending Unit Quits

Elías Cortez, director of the California state government's IT spending oversight agency, resigned in connection with an ongoing controversy over a \$100 million Oracle Corp. database contract that was awarded last spring. The California Department of Information Technology is due to be dismantled July 1 after the state legislature declined to reauthorize its funding [QuickLink: 39502].

## Cisco Adds Security Tools for Switches

Cisco Systems Inc. announced additional security features for its Catalyst 3550 and 2950 stackable Ethernet switches, which connect and serve in LANs. Cisco said the software upgrades, which are available free of charge, include tools for securing network management traffic, controlling access to resources and establishing required user identifications and passwords.

## Short Takes

New York-based PWC CONSULTING said it will change its name to MONDAY after being spun off from PRICE WATERHOUSE COOPERS & LYONS. . . . Tereasa, Calif.-based TOYOTA MOTOR SALES U.S.A. INC. said its 24-vehicle e-business unit will be shut down this month and folded into its main operations.

## Report: Asset-Tracking Troubles Cost Plenty

Poor tracking techniques can add 7% to 10% to firms' annual distributed hardware costs

BY THOMAS HOFFMAN

**D**ISTRIBUTED hardware concerns about tight IT budgets, a report issued this month charges that large companies are wasting millions of dollars by doing a poor job of tracking their distributed hardware assets.

In the Gartner Inc. report "Good IT Asset Management Can Save You Money," analysts Bill Kirwin and Jack Heine point out that roughly 90% of Gartner clients who were audited use "marginal practices" for hardware asset management. In addition, less than 25% of all global organizations have a life cycle asset management program. These oversights, the Stamford, Conn.-based market researcher claims, can cost companies dearly.

For example, shoddy tracking techniques increase the risk of poor system management, complex change management and below-average service levels—all of which can increase the total cost of ownership of distributed computing by 7% to 10% each year, or \$560 to \$800 per user for a company with 10,000 desktops, that can mean up to \$8 million in wasted spending.

## ASSET PROTECTION

For links to Computerworld stories, white papers and related information about asset management, visit our Web site.

QuickLink: 30601  
www.computerworld.com

## Room for Improvement

One piece of advice that Heine offers to corporate IT managers: Look beyond the initial cost of a PC or server to a comprehensive view of other support costs such as maintenance, licensing, disposal, standardization, acquisition "and all of those issues which have a greater impact on the life cycle cost," he said.

Although large companies have become increasingly sophisticated in their approach to asset management over the past decade, there's still quite a bit of room for improvement, particularly in how companies track their mobile assets, such as personal digital assistants and cell phones, said Heine (see story below).

Part of the problem is that effective asset management can also be "a huge resource drain," said Diane McLean, senior director of customer support at VHA Inc., an Irving, Texas-based hospital cooperative.

VHA conducts an audit at least once a year to tabulate its Intel Corp. servers and Micro-

## Tracking Tips

ADDRESS

CONTACT

IMPLEMENT

EXPIRE

soft Corp. enterprise licenses and compare those figures against its records.

Of course, some companies are extremely diligent about tracking their distributed assets. Asset management "is our bible. I can tell you where every monitor, mouse and keyboard is," said Ash Shehata, director of information systems at Annapolis Valley Hospital in Lancaster, Calif.

Still, Shehata agrees with McLean that asset management is extremely time-consuming. That's why he's an advocate of services being offered by hardware makers such as Dell Computer Corp., that will track a customer's entire hardware portfolio for a flat fee. ■

## Handheld Devices' Annual Costs Jump for Enterprises

BY MATT HANBLIN

The escalating expenses of managing handheld devices are starting to worry some IT managers.

The annual cost for equipment and support for a single handheld device could reach \$10,000, according to a report released last week by Gartner Inc. That's up from the \$2,500 per user the researcher reported in 1999.

Making that same device work wirelessly could bump up the per-user annual cost to more than \$4,300, according to the Stamford, Conn.-based market research firm.

That analysis doesn't sur-

prise Marc Rohde, IT manager at USFilter/Plymouth Products Inc. in Sheboygan, Wis. He said a \$3,000 price tag for handhelds without wireless connectivity "might be about right" when support and administration costs such as training are included. Total cost of ownership "is a major concern," he said.

## Pricing Proposition

Although enterprises vary on how they use handhelds, most agree that supporting them isn't cheap. Forrester Research Inc. in Cambridge, Mass., calculated last year that an enterprise could spend \$2,000 per year on a user who has a new



handheld device with 300 minutes of wireless data access per month and two custom integrated applications.

Handheld and wireless costs can be much higher than enterprise IT managers are prepared to pay, said Forrester analyst Frank Gillett.

"IT managers are in for a rude surprise when they start to do big deployments," he said. "It's not only the cost of the gear, but the support."

Gartner analyst Philip Redman studied several devices (see chart). At the high end, a wireless handheld's hardware and software annual costs could be more than \$2,500, with administration, support and operations bringing the total to \$4,342. In comparison, a smart phone with wireless voice and data functions could cost \$1,369.

"Enterprises are looking at issues like return on investment but often overlook essential components" of cmr, Redman said. ■





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# Warning: Go Slowly With Web Services

*Roundtable underscores need to proceed cautiously but says adoption is inevitable*

BY MICHAEL MEEHAN  
WESTBORO, MASS.

**W**EB SERVICES may be the next big thing, but a group of users, analysts and even Web services vendors acknowledged last week at a roundtable on the issue that significant barriers to using the technology remain.

Security concerns, interoperability, data trapped in legacy systems, inadequate networks, general confusion over how to use XML, the immaturity of current Web services protocols and slashed IT budgets were all cited as hurdles to using Web services. The message from those attending the first Boston Area Web Services Roundtable here: Be careful.

The lack of security is of concern to Dale Powers, enterprise data architect at Boston-based electricity distributor NStar Inc. He said that packaging XML functions in a document could create unforeseen tunnels through a corporate firewall. If security holes are regularly found in mature software, it's wise to be wary about emerging technologies such as Web services, Powers added.

## Standards Doubts and Limits

And Powers is skeptical about the work being done on standards. Supporters "have formed an organization around the fact that we need to talk about standards," he said, referring to the Web Services Interoperability Organization. "They're going to have to do a bit more than that," he added.

Even Web services supporters see limits to the technology. A lot of the information companies want resides in legacy back-end systems —

things like [IBM's] CICS and Cobol," said Steve Resnick, field consultant at Microsoft Corp. "That stuff is still hard to get at with Web services."

Fred Holaban, vice president of e-business integration products at SilverStream Software Inc. in Billerica, Mass., pointed out that many legacy systems are home-built, meaning that there's no vendor to supply a migration path for users.

Powers said NStar would only "experiment" with Web services rather than be an early

adopter. That's largely because the company works in a highly regulated industry, where it's graded on the performance of its systems, he said.

Ted Schadler, an analyst at Forrester Research Inc. in Cambridge, Mass., said Web services could create a swarm of activity behind corporate firewalls. "Web services, in some situations, is like getting a Mack truck to deliver an envelope," he said.

While much of the focus on Web services has involved putting wrappers around data so that it can be sent, many have forgotten that the data must later be consumed, according to Mike Plutch, chief

technology officer at Clear Methods Inc., a Web services developer in Cambridge, Mass.

"It doesn't do you a lot of good to build a wrapper if the applications don't match the data model of the receiver," he said. "Mapping data to your logic keeps hitting people at the lowest, lowest levels."

Andy Roberts, CTO at Web applications developer Bowstreet Inc. in Portsmouth, N.H., noted that "users are still try-

ing to figure out how to describe data in XML."

Yet all agreed that the use of Web services will increase and that the key will be to determine a way to use the still-immature technology appropriately rather than avoid it.

"The classic line is that systems integrators make a lot of money integrating systems," Schadler said. "If we can automate that integration and save ourselves that money, we win."

## Insider Insights to Web Services

**YED SCHADLER**, analyst, Forrester Research Inc. Security for internal and trusted-partner use of Web services can be achieved using traditional password methods, but it remains a murky fit.

**STEVE RESNICK**, field consultant, Microsoft Corp. Using Web services for the things they do well at, such as writing subscriptions and handling synchronous transactions.

**DAVE HOFFERT**, manager of emerging technologies, Sun Microsystems Inc. Web services won't replace your whole middleware layer, so be sure your use of Web services fits into a larger middleware methodology.

# IBM, Sun Integrate Tools With Middleware

*Rivals hoping to reduce complexity for app developers*

BY MICHAEL MEEHAN  
AND CAROL BLUM

Taking their rivalry to a new level, IBM and Sun Microsystems Inc. are each preparing to roll out integrated sets of application development tools that can be used across their respective suites of middleware products.

IBM last week announced plans to release plug-in tools for its WebSphere Studio development environment that support all of its middleware offerings. A plug-in for its Tivoli management software is available now, and IBM said that tools for DB2, Lotus Domino and other products will be added starting in the fourth quarter.

Meanwhile, Sun said it began shipping an upgrade of its Sun ONE Studio tools with support for rival application servers

from San Jose-based BEA Systems Inc. and Oracle Corp. on June 10. But a bigger announcement, expected to be made this week, is that Sun plans in the fourth quarter to combine its server-level software products and its development tools into a single offering for application development and testing.

Gerritt Borg, director of software support and development at CR Richard Ellis Services Inc., a commercial real estate firm in Los Angeles, said the reliability of applications has become more difficult to gauge as they have become more distributed.

"The one thing I think everyone has learned from this Web experience is that this is a very dynamic environment," Borg said. "Not only is there constant change, but you don't always understand how new code affects everything else."

As a Sun customer, Borg said he hopes that the vendor's bundling of its middleware and development tools will help his staff sort through that complexity. "I hate to use the word

seamless, because it's never seamless, but we're always looking for something to help us be more unified," he said.

That's exactly what IBM and Sun said they're trying to do. "We're addressing the developer pain of having to integrate separate tools," said

**“**

**Not only is there constant change, but you don't always understand how new code affects everything else.**

**GERRITT BORG,**  
DIRECTOR OF SOFTWARE  
SUPPORT AND DEVELOPMENT,  
CR RICHARD ELLIS SERVICES

Bernie Spang, director of WebSphere Studio marketing at IBM, noting that the new tools should help reduce the time and cost of developing applications. Likewise, Sanjay Sarathy, director of product marketing for developer enablement at Sun, said that Sun is trying to combat "a proliferation in the number of developer tools" that has forced many users to develop applications in separate silos.

IBM's WebSphere tools are based on open-source technology called Eclipse, which enables developers to work from a single portal-like interface with a wide range of tools from IBM and other vendors. The Eclipse project was launched last year and is managed by a consortium of vendors.

"IBM is a company with a lot of tools, and this is their attempt to create a simple and more consistent workbench for developers," said Mark Drives, an analyst at Stamford, Conn.-based Gartner Inc. ■

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## BRIEFS

## Microsoft Remedy Phase Nears End

Closing arguments in the remedy phase of the Microsoft Corp. antitrust case are due to be held June 19, after U.S. District Court Judge Colleen Kollar-Kotelly last week denied a Microsoft motion to dismiss the proposal made by the dissenting states. Microsoft claimed that the states had no jurisdictional basis for pursuing antitrust action on their own, but the judge said Microsoft's arguments were unavailing.

## Microsoft Issues Four Security Warnings

Meanwhile, Microsoft issued four new advisories about security holes in its software, including two that were given "critical" severity ratings by the company. One of these involves the Remote Access Service dial-up feature included in multiple versions of Windows. The other is related to a vulnerability in the golfer protocol used by Internet Explorer and other products.

## Critical Path Adds Packaged E-Mail

San Francisco-based Critical Path Inc., which previously focused on hosting e-mail systems, announced a packaged version of its software that can be installed behind corporate firewalls. The software runs on Windows NT and Solaris servers and is meant to compete with Microsoft Corp.'s Exchange software and IBM's Notes/Domino technology. Critical Path said.

## Short Takes

WORLDCOM INC. announced a set of storage, load-balancing and IP virtual private network services to augment its basic Web-hosting capabilities. ... Santa Clara, Calif.-based NETWORK ASSOCIATES INC. said it has found a computer virus that can infect JPEG image files, the first time one has been spotted.

## Future of ICANN Remains Uncertain

Bush administration seeks reforms as Sept. 30 contract expiration date looms

BY PATRICK THORNDIKE  
AND JAMES F. COLE

**T**he Internet Corporation for Assigned Names and Numbers (ICANN) has attracted a large body of critics, at odds with its decisions and overall direction, and it may now be living on borrowed time.

Bush administration officials must decide by Sept. 30 whether to renew the 1998 agreement that created ICANN or revert control of the Domain Name System (DNS) to the U.S. government, a move that would end the effort to privatize management of the Internet's address system.

While still supportive of the ICANN model, the administration hasn't decided whether to extend the agreement, modify it or let it expire, said Nancy J. Victory, an assistant secretary for communications and information at the U.S. Department of Commerce, who last week testified before the Senate Subcommittee on Science, Technology and Space.

The next couple of months will be crucial for ICANN. Said Victory, who outlined a series of steps that administration officials want the Marina Del Rey, Calif.-based organization to take to improve its operations. These include making reforms to ensure accountability, giving all Internet stakeholders a fair hearing and developing an effective advisory role for government, she said.

ICANN's main job is to ensure the stability and security of the DNS, and the organization is credited with creating competition for domain names and registries that previously were solely controlled by Network Solutions Inc. under a contract with the U.S. govern-

ment. That company is now part of Mountain View, Calif.-based VeriSign.

But it has been faulted, most recently in a report issued last week by the U.S. General Accounting Office, for moving too quickly to improve the security of the DNS root servers. A proposal for an enhanced technology architecture was due to the Commerce Department nearly two years ago but still hasn't been completed, according to the report.

ICANN has also faced intense criticism over the process it used to pick seven new top-level domains in late 2000, which resulted in the rejection of numerous proposals. Its process for electing board members has been another controversial sticking point.

## The Perils Facing ICANN

**ITS CURRENT STATUS:** ICANN's current four-year contract with the U.S. government to manage the Internet Domain Name System expires Sept. 30.

**WHY IT'S IN TROUBLE:** The organization is seen by many critics as not being representative, and decisions such as limiting the number of new top-level domains left many people unhappy.

**THE OUTLOOK:** The Bush administration supports the ICANN model, and few critics would want the government to take over. But ICANN will likely be reformed.

"Bias and favoritism are woven deeply into ICANN's form," said dissident ICANN board member Karl Auerbach at last week's subcommittee hearing. "ICANN resists pub-

lic accountability." Auerbach urged the Commerce Department to exercise "real oversight" of ICANN.

ICANN itself has proposed a series of internal reforms intended to address some of the issues, including changes in its policy development process and the composition of its board. Victory said the reform effort shows "great promise."

But that may not be enough for some critics. "Serious structural reform must be entertained," said Sen. Conrad Burns (R-Mont.). Burns said ICANN had morphed from a group charged with deciding purely technical issues "into a policy-making body—however, with none of the due-process requirements placed on agencies given policy-making power."

"Is everything perfect? Of course not," said Stuart Lynn, ICANN's president. But Lynn defended ICANN's effort to reform itself and said venturing into policy areas can't easily be avoided. For instance, in creating top-level domains, ICANN must consider non-technical issues such as which companies would operate them and for how long, he said. ■

## SAS Looks to Simplify Data Analysis Tools With Upgrade

BY MARC L. SOMMER

SAS Institute Inc. last week detailed plans for an upgrade of its flagship data analysis tools that include a series of new features aimed at improving the software's ease of use and manageability.

At its European users conference in Paris, Cary, N.C.-based SAS said the upcoming SAS Version 9 will add leveraging user interfaces that are being designed to simplify the software. SAS also plans to add new analysis functionality and multithreading technology designed to reduce the amount of server resources required by the applications (see box).

Pieces of SAS Version 9 will be released this summer, and

the new user interfaces are due to start rolling out by September, said Don Hatcher, vice president of technology strategy at SAS. The interfaces will offer rule-based views for end users in different parts of a company, Hatcher said.

Also during the summer, he added, SAS plans to ship a Java-based management con-

sole that will let IT workers distribute upgrades of the software from a central point instead of having to separately install them on individual PCs. Eddie Bauer Inc. is a longtime user of SAS tools. Harry Fieger, a vice president of customer relationship management at the Redmond, Wash.-based retailer, said he's especially interested in Version 9's multithreading technology. Fieger said he expects that the technology will allow the application to more efficiently exploit multiple CPUs as the analysis workload increases. ■

## Plan 9 From SAS

SAS VERSION 9 IS DUE TO INCLUDE THESE NEW FEATURES:

- Streamlined rule-based interfaces tailored for different users
- Test-mining and parallel data-mining capabilities
- Multithreading technology to optimize the use of system resources
- Support for Intel's 64-bit Itanium 2 chip on Windows and HP-UX
- An upgraded portal tool for sharing analysis results among users





## BRIEFS

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Clashing arguments in the remedy phase of the Microsoft Corp. antitrust case are due to be held June 19, after U.S. District Court Judge Colleen Kollar-Kotelly last week denied a Microsoft motion to dismiss the proposal made by the non-sticking Microsoft. Microsoft claimed that the states had no jurisdictional basis for pursuing antitrust action on their own, but the judge said Microsoft's arguments were unavailing.

## Microsoft Issues Four Security Warnings

Meanwhile, Microsoft issued four new bulletins about security holes in its software, including two that were given "critical" security ratings by the company. One of those involves the RemoteAdmin Service dial-up feature included in multiple versions of Windows. The other is related to a vulnerability in the graphics protocol used by Internet Explorer and other products.

## Critical Path Adds Packaged E-Mail

San Francisco-based Critical Path Inc., which previously focused on hosting e-mail systems, announced a packaged version of its software that can be installed behind corporate firewalls. The software runs on Windows NT and Solaris servers and is meant to compete with Microsoft Corp.'s Exchange software and IBM's Notes/Domino technology. Critical Path said.

## Short Takes

WORLDCOM INC. announced a set of storage, load-balancing and IP virtual private network services to augment its basic Web-hosting capabilities. ■ Santa Clara, Calif.-based NETWORK ASSOCIATES INC. said it has found a computer virus that can infect JPER image files, the first time one has been spotted.

## Future of ICANN Remains Uncertain

Bush administration seeks reforms as

Sept. 30 contract expiration date looms

BY PATRICK THIBODEAU  
WASHINGTON

**T**he Internet Corporation for Assigned Names and Numbers (ICANN) has attracted a large body of critics at odds with its decisions and overall direction, and it may now be living on borrowed time.

Bush administration officials must decide by Sept. 30 whether to renew the 1998 agreement that created ICANN or revert control of the Domain Name System (DNS) to the U.S. government, a move that would end the effort to privatize management of the Internet's address system.

While still supportive of the ICANN model, the administration hasn't decided whether to extend the agreement, modify it or let it expire, said Nancy J. Victory, an assistant secretary for communications and information at the U.S. Department of Commerce, who last week testified before the Senate Subcommittee on Science, Technology and Space.

The next couple of months will be crucial for ICANN, said Victory, who outlined a series of steps that administration officials want the Marina Del Rey, Calif.-based organization to take to improve its operations. Those include making reforms to ensure accountability, giving all Internet stakeholders a fair hearing and developing an effective advisory role for government, she said.

ICANN's main job is to ensure the stability and security of the DNS, and the organization is credited with creating competition for domain names and registries that previously were solely controlled by Network Solutions Inc. under a contract with the U.S. govern-

ment. That company is now part of Mountain View, Calif.-based VeriSign.

But it has been faulted, most recently in a report issued last week by the U.S. General Accounting Office, for moving too slowly to improve the security of the 13 DNS root servers. A proposal for an enhanced technology architecture was due to the Commerce Department nearly two years ago but still hasn't been completed, according to the report.

ICANN has also faced intense criticism over the process it used to pick seven new top-level domains in late 2000, which resulted in the rejection of numerous proposals. Its process for electing board members has been another controversial sticking point.



"Bias and favoritism are woven deeply into ICANN's form," said dissident ICANN board member Karl Auerbach at last week's subcommittee hearing. "ICANN resists pub-

lic accountability," Auerbach urged the Commerce Department to exercise "real oversight" of ICANN.

ICANN itself has proposed a series of internal reforms intended to address some of the issues, including changes in its policy development process and the composition of its board. Victory said the reform effort shows "great promise."

But that may not be enough for some critics. "Serious structural reform must be entertained," said Sen. Conrad Burns (R-Mont.). Burns said ICANN had morphed from a group charged with deciding purely technical issues "into a policymaking body—however, with none of the due-process requirements placed on agencies given policymaking power."

"Is everything perfect? Of course not," said Stuart Lynn, ICANN's president. But Lynn defended ICANN's effort to reform itself and said venturing into policy areas can't easily be avoided. For instance, in creating top-level domains, ICANN must consider non-technical issues such as which companies would operate them and for how long, he said. ■

## SAS Looks to Simplify Data Analysis Tools With Upgrade

BY MARC L. BOWEN

SAS Institute Inc. last week detailed plans for an upgrade of its flagship data analysis tools that include a series of new features aimed at improving the software's ease of use and manageability.

At its European users conference in Paris, Cary, N.C.-based SAS said the upcoming SAS Version 9 will add Java-based user interfaces that are being designed to simplify the software. SAS also plans to add new analysis functionality and multithreading technology designed to reduce the amount of server resources required by the applications (see box).

Pieces of SAS Version 9 will be released this summer, and

the new user interfaces are due to start rolling out by September, said Don Hatcher, vice president of technology strategy at SAS. The interfaces will offer role-based views for end users in different parts of a company, Hatcher said.

Also during the summer, he added, SAS plans to ship a Java-based management con-

sole that will let IT workers distribute upgrades of the software from a central point instead of having to separately install them on individual PCs.

Eddie Bauer Inc. is a long-time user of SAS tools. Harry Egler, a vice president of customer relationship management at the Redmond, Wash.-based retailer, said he's especially interested in Version 9's multithreading technology. Egler said he expects that the technology will allow the application to more efficiently exploit multiple CPUs as the analysis workload increases. ■

Plan 9 From SAS

UNDIS  
HEAD

VERITAS

# Merged Electronic Trading Net to Set Sights on Nasdaq

**Goal of \$508M ECN deal is to establish a stock exchange**

BY LUCAS BEARMAN

**L**AST WEEK'S announcement that Instinet Group Inc. will buy competitor The Island ECN Inc. another potential stock exchange competitor while further complicating its uphill battle to woo customers to its forthcoming SuperMontage electronic-trading system.

Instinet's \$508 million, all-stock purchase of New York-based Island will create an electronic communications net-

work (ECN) that represents about 22% of Nasdaq's order flow, which "does take some of the thunder away from Nasdaq," said Damon Kovelsky, an analyst at Mercator Research Inc. in Newton, Mass.

Island, which had been pursuing exchange status on its own, said it will continue to do so jointly with Instinet. The move, analysts said, will likely force the U.S. Securities and Exchange Commission to redefine what an exchange is, something it has shown reluctance to do in the past.

Island Chairman Edward Nicoll and Instinet CEO Mark Nienstedt said during a conference call last week that they expect the buyout to save the combined firms millions of dollars each year through syn-

ergies in technology, including the use of a single trade-clearing system after consolidating onto New York-based Instinet's platform.

"We've got some real benefits in combining these two companies," Nienstedt said. "On the cost side, we do see synergies that we conservatively estimated to be at a \$25 million a year [in 2003] in areas of clearing and combining some of the facilities and shared corporate services and technology. Over the longer term, we think there will be opportunities for more of those" cost savings.

A spokeswoman for Instinet declined to comment on how the merger may affect technical staffing at the two firms.

Nicoll said that the companies will continue to be run

## Trading Up

The Instinet and Island ECN merger could save the two \$25 million in 2003 with efficiencies that include:

**CONSOLIDATING** clearing operations onto Instinet's services.

**CONSOLIDATING** data facilities.

**INTERGRATING** corporate trading engines.

**SHARING** corporate technology services.

separately and "continue to set our pricing policies separately" until the merger is completed. That process should take about three months, according to an Instinet spokesman.

"The technological integration will follow a step behind" the pooling of liquidity between the two firms before connecting the trade-matching engine and then eventually migrating toward one integrated technology platform, said Matthew Andrews, president and CEO of Island.

"Remember, these systems are very different. And we think they're complementary," he said. For example, Instinet's Smart Router technology already offers traders access to several liquidity markets, including Island's.

An Instinet spokeswoman was unable to comment on specifics regarding the integration of back-office systems between the two firms.

## Uncertain Future

Island had previously agreed to participate in Nasdaq's SuperMontage, and it wasn't immediately clear whether that plan will be shelved. Nicoll said Instinet will decide whether to use SuperMontage when it's rolled out next month.

The SuperMontage system will give traders many of the features they can get only through ECNs, such as the ability to display their limit orders anonymously and the ability for brokers to separate their own trades from those they execute for customers.

Mike Demers, a spokesman for Nasdaq, said SuperMontage is still on track to launch around the end of July.

Avivah Litau, a financial services analyst at Stamford, Conn.-based Gartner Inc., said she believes that SuperMontage could launch with something less than a bang.

"It's not clear brokers are going to just quickly migrate to the Nasdaq system when the Instinet system has so much more momentum," Litau said. "Brand is not everything. Instinet has a tremendous early market-mover advantage compared to SuperMontage." ■

# OS Release Pushes HP Toward Itanium

**HP-UX upgrade part of long-term plan to move users from proprietary PA-RISC**

BY JAKUBKA WYMAN

HEWLETT-Packard Co. edged a little closer to its goal of migrating users from proprietary RISC systems to standard Intel Corp. servers with the release of its latest version of HP-UX last week.

The company's HP-UX 11i Version 1.6 is the first high-end Unix operating system that has been designed from the ground up for Intel's 64-bit Itanium architecture.

According to HP, the operating system offers exactly the same functions and features as HP's Unix version for PA-RISC boxes. This means that users will be able to take applications running on HP's current PA-RISC servers and run them unchanged on Itanium boxes, said Ram Appalraj, a director for HP's Unix business.

But users will have to wait until a new generation of Itanium servers begins to ship later this year to see which, if any, price/performance gains they can derive by moving applications from PA-RISC servers, said Charles King, an analyst at

The Sageza Group Inc. in Mountain View, Calif.

And though PA-RISC-based Unix applications will run unchanged on Intel servers, users will need to recompile many of them if they want optimal performance on the Itanium technology, said Tony Iams, an analyst at D.H. Brown Associates Inc. in Port Chester, N.Y.

Still, the release of HP-UX 11i underscores HP's long-term commitment to moving users from expensive, proprietary RISC hardware technologies to cheaper servers based on standard Intel processors, King said.

"This is the first real step toward migrating users from PA-RISC to Itanium," Iams said.

## Strategic Direction

As part of this strategy, HP has said that in the next few years it will also migrate users of Compaq Computer Corp.'s Alpha processor and Tandem Computer Inc.'s MPE processor technologies to Itanium.

## HP-UX 11i v1.6 For Itanium

• Built from the same code base as HP-UX 11i for PA-RISC.

• Designed to scale up to 64 processors.

• Data and networking compatibility with PA-RISC systems.

• Same enterprise, system management, high-availability and security tools as HP-UX 11i for PA-RISC.

which HP has helped develop over the past eight years.

The same high-availability, clustering, serviceability and management functions found on HP's Unix for PA-RISC are available on the latest Itanium version released last week. Appalraj said "HP-UX for Itanium is fundamentally designed to protect the investment of customers who are on PA-RISC," he noted.

Sometime in mid-2003, HP plans to release a common version of HP-UX that users can run on both PA-RISC and Itanium servers.

Moves like the release of the new operating system are the kind of steps HP needs to take if it wants to migrate users to a common Intel platform, said John E. Wolf, CEO at Lanco Ltd., an athletic-club chain in Los Angeles. HP's effort to ensure that elements of its RISC technology are included in the Itanium design should also ensure a smooth migration, he said.

"But we don't expect to move to Itanium for several years because we don't really need it," Wolf added. ■

## MORE WAYS TO SEE BIDS

Global Securities launches an electronic trading system in competition with Nasdaq.

CircleLink 30588  
www.computerworld.com



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## BRIEFS

## Novell to Buy Web Services Tools Vendor

Novell Inc. announced a deal to acquire SilverStream Software Inc., a Billerica, Mass.-based vendor of Web services development tools, for about \$212 million in cash. Novell said it expects to complete the deal next month. SilverStream would become a subsidiary of Novell and would still be run by CEO David Litwack, who would be named a senior vice president by Novell.

## Vendors Form Mobile Standards Group

A group of more than 200 technology vendors and network operators said they're forming a trade association to work on interoperability standards for mobile telecommunications products and services. The Plunkett, N.J.-based Open Mobile Alliance Ltd. consolidates the standards activities of various groups, including the WAP Forum.

## McData's President to Take Over CEO Job

McData Corp., a Bloomfield, Colo.-based vendor of storage network solutions, named John Kelley to become its CEO, effective Aug. 1. Kelley, who joined McData last August as president and chief operating officer, will take over the CEO's job from Jack McConnell, one of the company's co-founders. McConnell will continue as McData's chairman and focus on long-term strategy.

## Siebel CFO: Business Still 'Challenging'

Ken Goldman, chief financial officer at software vendor Siebel Systems Inc. in San Mateo, Calif., told a group of investors that the business environment remains "every bit as challenging" as it was during the first quarter. Siebel reported a 20% year-to-year drop in revenues for the first quarter.

## Keynote Bolsters Web Site Monitoring Tools

New diagnostic services aim to pinpoint performance problems for IT managers

BY TODD R. WEISS

**K**EYNOTE SYSTEMS Inc. last week broadened its e-commerce performance-monitoring capabilities, announcing a series of services designed to tell companies more than just whether their revenue-generating Web sites are having trouble operating.

San Mateo, Calif.-based Keynote launched three new ser-

vices and said it has upgraded three existing ones as part of a strategy to support end-to-end monitoring of e-commerce applications and systems. The added diagnostic features provide IT managers with real-time information on Web site problems and how they can be fixed, keynote officials said.

Boise Office Solutions, an office supply company in Itasca, Ill., is beta-testing an upgraded service for monitoring

online transactions that Keynote plans to make available next month. Chris D'Agostino, Boise's e-commerce development manager, said the service now provides more detailed information to help IT staffers stay on top of problems with the company's Web site.

Keynote has also improved the service's ability to pinpoint network or other system problems, D'Agostino said.

In addition, he said, new alert function pages IT workers when problems occur and indicates whether they're being caused by the site or by the Internet.

Tools are being integrated with the CRM and supply chain applications and with similar products from rival vendors.

PLM technology is designed to let companies share a single view of product data among different departments and their external suppliers. Companies can lower their costs by using the software to help shorten manufacturing cycles and the time it takes to bring products to market, said David Cahn, a software consultant at Y2G Associates in Atlanta.

Michael Hook, an analyst at Current Analysis Inc. in Sterling, Va., said in a report that the new applications should make Baan a stronger competitor in the PLM market.

But Hook added that the software currently "is missing important functionality," such as a sourcing module and the ability to capture feedback about products from a company's customers.

Ilana Jucha, president of the new Baan PLM business unit, said she expects SAP to be its main competitor. In line with its overall strategy, Baan plans to target the software at the aerospace, transportation, electronics and discrete manufacturing industries, Jucha said. ■

## AT A GLANCE

## Watching The Web

The services announced by Keynote include the following:  
**TRANSACTION PERSPECTIVE 4.0**  
An upgraded service offering more detailed analysis of online transactions. **Monthly fees start at \$1,200 per Web address.**

**DATA PULSE**: A new service that provides real-time information about Web site performance. **Monthly fees start at \$1,000 per Web address.**

**RED ALERT 2.0**: An upgraded service that measures performance and generates alerts when problems occur. **Monthly fees start at \$95.00 per transaction that's removed.**

The alert capability "gives us a jump" on fixing the problems, D'Agostino said. That's important for a company that booked about one-third of its \$3.5 billion in product sales online last year, he added.

Rod Ketchum, a systems architect at retailer Recreational Equipment Inc. (REI) in Kent, Wash., said the more detailed information being added by Keynote should be especially helpful because REI's internal systems don't always show glitches that are being experienced by users of its Web site.

"It's sometimes hard to know that there's a failure," Ketchum said. "To have had this over the holiday season would have been huge."

Mike Baglioni, a senior product manager at Keynote, said the new services are components of a plan to widen the company's focus on overall performance management of Web sites. The strategy will move Keynote beyond benchmarking and into services that look more at the operations and diagnostic requirements of customers, he said.

The diagnostic features could provide far more value to users of the services than Keynote's existing performance-monitoring functions, said John McConnell, an analyst at McConnell Associates in Boulder, Colo. For example, he said, companies may be able to use the new services to run their Web sites more efficiently and reduce downtime. ■

## Baan Rolls Out Software For Tracking Product Data

New tools part of comeback strategy

BY BRIAN SULLIVAN  
LANSING, MICH.

Baan Co. last week launched an upgraded set of product lifecycle management (PLM) application software and said it has set up a separate business unit for the software, which manufacturers can use to track their products from development onward.

The rollout of the Ibaan for PLM suite, which was announced at a manufacturing technology conference here, puts Baanvecht, Netherlands-based Baan in direct competition with SAP AG and other vendors in that part of the business applications market.

The PLM applications are the third in a series of Web-enabled offerings released this year by Baan as part of an ongoing effort to regain momentum following big losses that led to a buyout of the company

by London-based Invenys PLC in August 2000.

Baan added Web support to its customer relationship management (CRM) software in January. Itqnet link: 264081 and shipped new supply chain applications in April. Laurens van der Tang, Baan's president, said last week that the PLM

## Product Track

Baan's PLM suite includes the following modules:

**IBAAN PDM**, a product data management application that provides common information about products to different users.

**IBAAN PARTNERNET**, which extends the PDM software onto an internet for communicating with customers and suppliers.

**IBAAN LIFECYCLE ANALYZER**, for analyzing the potential impact of product changes on cost, quality and other factors.

**A SET OF ROLE-BASED USER INTERFACES** for workers in individual departments.





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"It's sometimes hard to know that there's a failure," Ketchum said. "To have had this over the holiday season would have been huge."

Baglioni, a senior product manager at Keynote, said the new services are components of a plan to widen the company's focus on overall performance management of Web sites. The strategy will move Keynote beyond benchmarking and into services that look more at the operational and diagnostic requirements of customers, he said.

The diagnostic features could provide far more value to users of the services than Keynote's existing performance-monitoring functions, said John McConnell, an analyst at McConnell Associates in Boulder, Colo. For example, he said, companies may be able to use the new services to run their Web sites more efficiently and reduce downtime. ■

## Product Track

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MARYFRAN JOHNSON

# Security Strategists Wanted

**B**Y VIRTUE OF HIS EMPLOYER, Scott Charney of Microsoft is probably the most widely recognized name among an emerging breed of corporate information security chiefs. Yet the onetime federal cybercop and prosecutor has been on the job in Redmond only about 10 weeks. He divides his time between figuring out how to secure Microsoft's massive and infamously insecure product line, and

quietly wielding his clout in Washington on a number of government security boards and consortia.

What he doesn't do, however, is call himself a chief security officer, or CSO. His title is chief security strategist.

The distinction is quite deliberate. As Charney told me last week, he sidestepped the CSO title because it implies an internally focused, button-down-the-hatches type of IT cop — someone busier protecting corporate resources from the bad guys than thinking strategically about computer security.

"The focus of my job is not to protect Microsoft from hackers — we have people who do that — but how to make our products more secure," he explained. "I'm not the internal cop."

Smart choice, given the state of the CSO landscape these days.

As our story last week pointed out [QuickLink 30109], many CSOs are on a slippery slope these days, unable to get a grip on a sustainable corporate mission. There's been a minor rash of high-profile departures by IT security chiefs from banks and brokerage houses, along with a major sense of deflating expectations. As one CSO told our reporter: "The greatest threat we face is the belief of senior management that there is no threat. So we don't get funds, money or resources."



Microsoft's approach to cyber security is in chief of Google's approach. The one serious hint at computer security is on the Microsoft website.

There also hasn't been a notable surge of security job creation — only more security duties assigned to already overloaded IT staffs.

Seems counterintuitive, doesn't it? Information security awareness is at an all-time high, and there's not a CEO on the planet who would shrug off the need to protect corporate assets or customer privacy. Yet in a recent survey by Booz Allen & Hamilton of 72 CEOs from large companies, only 54% of them had a CSO in place.

Now, some of the flagging fortunes of CSOs are no doubt connected to corporate IT's ongoing struggle —

made all the more acute by our lackluster economy — to provide measurable business value.

When the CIO title started cropping up more than a decade ago, it was generally ridiculed as a useless, powerless position. The job churn among CIOs led to the quip that the acronym really meant "Career Is Over." Nobody's laughing now, of course. But that hard-won place in the executive boardroom isn't something many CIOs are keen to share with their security-minded colleagues.

So there they sit, between the proverbial rock and a hard place. What should the CSO job really be when it grows up? There's a credible school of thought that CSOs need to be as technically grounded and focused as CTOs. Then again, many of the more successful CSOs are showing up for work with extensive government and law enforcement backgrounds rather than roots in IT.

Whatever the ultimate mix of skills turns out to be, we need more strategists and long-term thinkers on the security front. Perhaps what we also need are fewer corporate titles subdividing the ranks of IT and jockeying for position outside the executive washroom. ■

PIMM FOX

# Arabs, Jews Study IT Together

NAZARETH, ISRAEL

**O**RGAD LOOTSKY heard the bombing near here that killed 20. But Lootsky, who has trained IT professionals for seven years, still believes he can forge links between Arabs (Christian and Muslim) and Jews.

In this northern city, which has an Arab section and a Jewish one, called Nazareth Illit, high school teenagers from the Nazareth Baptist School and its Jewish counterpart come together

to earn their Cisco Certified Networking Associate (CCNA) certificates in classes taught by Lootsky.

These young adults exhibit seriousness preparing for their futures, but what's compelling is they trump the political pressures that may mix among Arabs and Jews potentially confrontational.

Haya Saman, a 15-year-old 10th-grader at the Nazareth Baptist School, has been in the program for two months. "I want to make a difference," says Saman, who considers Bill Gates a hero. "I want to fulfill my dreams," she adds, explaining her studies for the CCNA certificate. She's also excited about the connections she's making with Jewish classmates.

The program has backing from local educators such as Ousama Moaleem, principal of the Nazareth Baptist School; parents; and scholarship help from Salesforce.com/foundation, individuals and Nazareth Illit-Yezreel Technological College, which hosts the sessions on its campus.

Zilka Abzari, who established the program in Nazareth and is business development manager at Cisco in Israel, said that after a suicide bombing,



Peace has been a computer world's West Coast barista, chief. Contact him at peace.jail@computerworld.com.



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tensions were high, and some parents and officials were dubious about the plan. "But we felt this is time people should show there are many good things we can do together," she said.

Moslem, whose school of 1,060 makes do with 20 computers and lacks networking equipment and teaching space, agreed: "The students are excited; the atmosphere is comfortable, and I look forward to more cooperation with the Jewish school."

But as with IT projects in the business world, reality tempts enthusiastic visions. Irit Klein, general director of the Nazareth Illi-Yezreel Technological College, said on a day when people were visiting bombing victims in the hospital that she wholeheartedly supports the program and will find money to keep it alive, but that this alone will not change the enmity in the region. "This is a small program, and we would be happy to enlarge it," she said, "but we have to be realistic."

And yet the attitude of Alex Etkin, a 17-year-old 11th-grade Jewish student in the program, should encourage more optimism. "We're all here to learn," said Etkin, who has dreams of being an artist as well as an IT professional. "It doesn't matter if you are Arab or Jewish, we want to learn together." ■

DAN GILLMOR

## IT Is Key To Energy Trade Reform

**A**MERICA'S ENERGY trading companies are going to have to re-engineer their IT systems to provide more transparency to financial markets and regulators. That's fine, but the energy traders aren't the only ones who need to clean up their act.

It's not just California's electricity customers who have gotten ripped off in the past several years. Wall Street investors are binding the massive wounds they suffered in the stock bubble that deflated so suddenly and left a generation of Americans wondering — with good cause — whether the markets were hopelessly rigged against the average investor.

The litany of sleazy financial news continues daily. Sometimes the issue is what's called "transparency" — a lack of useful or, in some cases, truthful infor-

mation upon which investors can make informed decisions. Even when disclosures are true, they're often hidden in the footnotes or other parts of SEC filings. All this is compounded by willfully blind boards of directors and accounting firms.

IT didn't create that problem, either. But once again, it will definitely be part of the solution.

As *Computerworld* reported June 3, energy firms have been told they must improve the transparency of their systems so that regulators, not just the parties to the trades, can see what's going on. Only then do the ultimate users of energy have a chance of buying in an honest marketplace.

A hallmark, and one of the best features, of the energy markets is the nearly real-time nature of the information flow. Markets can react to chang-



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prompt disclosure of vital data, for example, such as insider sales of stock. That's a start, but it's not enough.

In an era of computers and fast networks, instant disclosure should be the rule in a variety of financial reporting. Today, it's the utter exception. This will take more than just the cooperation of people at the tops of companies, and IT folks can quietly lobby in this direction.

### The Experience Shortage

**I**HAD HOPED the pundits were finally not embarrassed to cite any more of Harris Miller's industry-bankrupted and intellectually bankrupt "studies," but Pimco Fox dashed that hope [QuickLink: 29657]. He steps up and toes the industry line, warning of another looming IT labor shortage. This time it's because those

troublesome young IT workers don't have enough experience. But wait: perhaps more training will save the day. I don't think so.

First the industry had to get rid of experienced older workers because they didn't have the right skills. Now the workers with the right skills don't have the right experience. And forget that training idea, too expensive and time-consuming. To be competitive, companies need workers who can hit the ground running, remember? What's a poor IT trade association to do? I know!

We'll get Congress to let us have more H-1B indentured servants, just to tide us over until the local workforce has

the proper balance of skills and experience, of course. Thanks, Miller. Thanks, Fox. Nudge, nudge, wink, wink. **Torrence Vaughn**  
Senior programmer/analyst  
Garretts, S.D.

### 'Improved' Solaris 9

**T**HE MAY 27 article on Sun Solaris 9 [QuickLink: 30070] noted that it comes "with more than 300 new features intended to boost the reliability, availability, scalability and performance of the Unix operating system." Wow! The folks using prior versions must have been missing a lot. The article also notes that "making such a wide range of functions available at the operating system level" is a sign of Sun's maturity. IBM has been doing this for years, with OS/400. Nice to see others catching on. OS/400 is 64-bit, has been since 1989, and we needed to rewrite no application code when we upgraded from CISC to RISC and 64-bit.

**Chuck Lewis**  
Manager of IT  
Indapuls

### Vulnerable Data

**T**HE ARTICLE "XML's Dirty Secret" had a catchy title, but I expected more [QuickLink: 29635]. Having metadata within the data structure doesn't necessarily make XML more vulnerable than any other data format. Any data structure will be cracked sooner or later because no structure is meant to protect the data in the first place. Other techniques are needed for this kind of task, such as XML signature or XML encryption. You are right that we need to be more aware of the security of data, but this applies to all kinds of data.

**Yuhong Guo**  
Software engineer  
Webster Solutions  
Bullitt Grove, IL  
yguo@webster.com

**G**IVEN THE processing power needed to scan and select fields for encryption, the cost and complexity of administration and the likelihood that administrators will forget to mark important fields for

But if IT can get executives to buy into the idea, there's a rich opportunity to turn disclosure from a shell game into a demonstration of something essential: a belief that investors deserve relevant information almost as soon as the insiders see it. Insider-selling reports are an excellent place to start. The minute investors tell a company of their intention to buy or sell shares or exercise options, that information should be on the Web. It shouldn't wait for the official SEC report.

Deciding how fast to take this concept isn't a simple job. Should unaudited financial statements be released the minute the quarter ends? How about every month? Every week? Where does competitive interest end and useful disclosure begin? IT can't answer those questions.

But we'll better start asking. Market misbehavior is a corrosive influence. If it persists, our system itself could be in jeopardy. That's bad news — scary in its implications — for everyone. ■

## READERS' LETTERS

encryption, I believe that the solution in the story "XML's Dirty Secret" falls into the typical pitfall of security dogmatists, making security too granular.

**Ray Hooper**  
Durham, N.C.

### Counting Down

**I**M A SECOND-YEAR CIS student. So far, I've taken and, like a Bataan Death March survivor, endured only one accounting class. Unfortunately, Patricia Kieffer's editorial "Counting Is King" [QuickLink: 30031] made sense.

**Mike Johnson**  
Tacoma, Wash.

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## EDITOR'S NOTE

**G**IVE THE FOLKS at Master Lock Co. some credit. While other companies ran around with their hair on fire in the late 1990s — pouring millions of dollars into dot-com spin-offs — Master Lock ignored the hype (see page 37). First, it got its house in order by fixing its supply chain system. And now it's finally ready to delve into e-commerce — at a slow, methodical pace. Executives were determined to do it right the first time. What a concept.

Milwaukee-based Master Lock and other slowpokes have the advantage of learning from the mistakes of the hair-on-fire crowd and of working with more mature (and cheaper) software.

Obviously, not every company can take this late-to-market approach. Some fast-moving industries really had to be early adopters of online commerce. But each business takes a different approach. Ikea International, the Denmark-based home-furnishings retailer, still doesn't take orders at Ikea.com because the ROI just isn't there [QuickLink 29720].

E-commerce isn't glamorous or new or unique anymore — and that's good. Now the focus is on basic business principles such as back-office integration (so you can tell the customer what's really in stock) and ROI and building trust. It's just plain commerce — another channel to reach customers, dealers and suppliers.

Someday we'll be able to ditch jargon like B2C, e-CRM and B2B because those terms will blend together as e-business, a word covering all the electronic methods of doing business. And then the e will fall off, too. After all, we don't say phone-business or handshake-business or store-business. It's just business, all of it made possible or enhanced by technology. ▶

Mitch Betts (mitch\_betts@computerworld.com) is director of Computerworld's Knowledge Centers.

## KNOWLEDGE CENTERS ONLINE

Knowledge Centers provide practical information about specific technologies and IT topics. In addition to this monthly Special Report in print, there are numerous resources at our Web site, including research links, glossaries, white papers and the following online features.

**Numbering Along:** XM Satellite Radio has developed light EMI and FM, data linkages with electronics retailers to help them sell a new product and earn commissions.

**Cash Shovel:** Sprint is moving to paperless payments for suppliers. And Shop At Home's cable TV network offers limited-duration specials on its Web site when phone lines are jammed.

**Scalability:** IBM's WebSphere discusses the needs of high-volume Web sites.



QuickLink: 55400  
www.computerworld.com



# E-Commerce Grows Up

After boom and bust, the emphasis now is on back-office integration, usability, ROI and building trust.

**I**N A BROAD SENSE, electronic commerce — doing business by sending messages across a network — is almost a century old. In 1910, 15 florists banded together to exchange out-of-town orders for flower arrangements. Their Florists' Telegraph Delivery group, now FTD Inc., may have been the first real e-commerce network.

But for e-commerce that links computers, one key requirement is standardized business documents, so computers on each end of the wire can understand each other. That has its roots in June 1948, when the Soviet Union — which controlled eastern Germany — cut off road, rail and barge access between western Germany and the parts of Berlin that were controlled by the U.S., England and France after World War II.

The result was the Berlin Airlift. During the next 13 months, more than 2 million tons of food and other supplies were flown into West Berlin by air. But tracking the cargo, which had to be loaded and unloaded at top speed, was next to impossible with shipping manifests in different forms and, sometimes, different languages.

To solve the problem, U.S. Army Master Sgt. Edward A. Guilbert and other logistics officers developed a standard manifest system that could be transmitted by telex, radio-teletype or telephone. They tracked thousands of tons of cargo per day until the roads to Berlin were reopened in 1949.

Guilbert didn't forget the value of standard manifests. In the early 1960s, while working for Du Pont Co., he developed a standard set of electronic messages for sending cargo information between Du Pont and a carrier, Chemical Leishman Tank Lines. In 1965, Holland-America Steamship Line be-

# The Story So Far

FTD's flowers-by-wire network planted the seeds of e-commerce a century ago. By Frank Hayes

gan sending trans-Atlantic shipping manifests as telex messages that were then converted into paper tape and input into the company's computers.

By 1968, so many railroads, airlines, truckers and ocean shipping companies were using electronic manifests that they formed the Transportation Data Coordinating Committee (TDCC) to create cross-industry standards — and in 1975, the TDCC published its first electronic data interchange (EDI) specifications.

The grocery and food industry began an EDI pilot project in 1977. By the early 1980s, Ford Motor Co. and General Motors Corp. required their suppliers to use EDI. Big retailers such as Sears, Roebuck and Co. and Kmart Corp. also demanded EDI.

But while EDI saved large customers money by doing away with all that paper, EDI was expensive for suppliers. It required using costly software and value-added networks (VAN) — and

often a different EDI system for each big customer since no one used exactly the same subset of EDI standards. But if a huge customer demanded EDI, the choice was simple: No EDI, no sale.

By 1991, about 12,000 U.S. businesses were using EDI. That was also the year the U.S. government lifted restrictions on commercial use of the Internet, and the year Tim Berners-Lee at the Swiss research lab CERN created the first Web browser. A new kind of e-commerce — business to consumer, on the World

Wide Web — was about to explode.

In 1994, the Netscape Navigator Web browser included support for "cookies," tiny data files stored on a user's computer that made it practical to create Web stores and identify customers, collect data about them and personalize sales pitches to them.

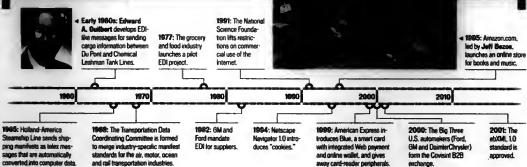
## Moving Online

While new online superstores such as Amazon.com Inc. sold products online at bargain prices and without keeping goods in stock, existing brick-and-mortar businesses frantically worked to build their own presences on the Web. An entire infrastructure grew up to support the dot-coms: United Parcel Service Inc. and FedEx Corp. handled shipping, third-party companies offered credit-card processing, and electronic cash systems, and American Express Co. even launched Blue, a "smart card" designed specifically for online shopping.

The Internet was revolutionizing business-to-business e-commerce, too. EDI across the Internet was much cheaper than VANs, and big EDI users were developing their own online exchanges based on Web-like markup languages instead of rigid EDI documents. In 2001, a version of XML designed for electronic business, dubbed

ebXML, was officially standardized, and user groups today are working to merge the best elements of EDI and ebXML to make e-commerce even more frictionless.

And now, on with the story...



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## What lies ahead for Web merchants? Advanced search, 3-D images, real-time inventory — and credibility.

By Gary H. Anthes

**T**HEY ARE MOSTLY GONE now, those early online retailers. They believed profits didn't matter. They saw advanced technology as the silver bullet. And their business plans ran to just six words: "Build it, and they will come."

Now, the dot-com survivors say, there's a new focus on basics, such as how to attract customers to a site once it's been built and how to make them happy there. There's a big push to integrate Web sites with back-end systems and brick-and-mortar retail operations. And, yes, there's still a drive toward the latest technologies, such as wireless, 3-D and Web site personalization.

"The first use of a new technology is always imitation of the old," says Michael Shamos, co-director of the Institute for eCommerce at Carnegie Mellon University in Pittsburgh. "So what we see in e-tailing is the first thing you do with your Web site is replicate your catalog."

Although understandable, that's a huge mistake because an online catalog is harder to use than a paper one, Shamos says. "A catalog can't ask you questions. So what Web sites are generally terrible at is eliciting consumer needs," he says.

But the best sites are moving far beyond cataloglike presentations. A year ago, Shamos asked his e-commerce graduate students to see how many Web pages they had to traverse on Delray Beach, Fla.-based Office Depot Inc.'s Web site to find the heaviest-duty stapler offered. Results ranged from 23 to 56 pages.

But now you can get the answer (a \$70 behemoth that will staple 210 sheets at once) in just five clicks. "They now have a beautiful new interface I haven't seen anywhere else," Shamos says. The advanced "search by attributes" option lets you select and search product characteristics. There are 23 listed for staplers, such as color, staple size, grip material, sheet capacity and warranty.

Another e-retailer that Shamos says heralds the future is Lands' End Inc. in Dodgeville, Wis. The online clothing store allows shoppers to build virtual models of themselves and then use the models to try on and display clothing. Lands' End says the modeling service from Montreal-based My Virtual Model Inc., which stores a shopper's model and lets him use it at a number of clothing Web sites. The next step, which Shamos says is the subject of research at Carnegie Mellon and elsewhere, will be true 3-D images of models and products.

Much research is going into how to make online sites more trusted, and the answer doesn't lie in fancy technology. In a recent survey by Yonkers, N.Y.-based Consumers Union, only 29% of 1,500 U.S. Internet users polled said they trust Web merchants, far fewer than those who trust off-line retailers.

The Web Credibility Project at Stanford University is trying to identify what factors make a Web site trusted and respected. A few Web sites, such as Amazon.com and The New York Times site, are "teaching the ceiling in terms of credibility," but most could do substantially better, says B.J. Fogg, director

of the Persuasive Technology Laboratory at Stanford. Factors that decrease credibility include typos, broken links, a Web counter showing only a few thousand hits and text that's too small.

Attention to these things will become increasingly important as the population becomes more sophisticated online, Fogg says. "We've found that

little things have surprisingly large consequences in terms of credibility," he says. "For example, that little copyright notice on the bottom of the page: How many Web sites still have 2001 or 2000 there? Details matter."

Fogg says high-tech features sometimes backfire. "A few years ago, animation was a great gee-whiz kind of tech-

# E-retail!

## Goodbye To Wires

Ideally, a Web site that tries to sell something should have the audio and visual appeal of a salesperson, says Carnegie Mellon's Michael Shamos. The trouble is, few home Internet connections have enough bandwidth to make that possible.

But wireless communication based on the 802.11 standard will change that, he predicts. "If I can send 10M bit/sec. or 50M bit/sec. into your house through 802.11, now I can give you unbelievable multimedia content," Shamos says. "I foresee Web sites where you actually get sold to, and if you don't like that you can press a button that says, 'No, I prefer text.'"

Wireless will transform e-retailing by blurring the distinction between virtual and physical stores, says Cap Gemini's John M. Jordan. "What if you could see the store layout on the shopping cart, and it's the same layout you see on your desktop? So I have my Palm Pilot at the store ready with my shopping list, and I say to ship certain things to me because they are not in stock, or I don't want to pick them up. Wireless can make this really seamless."

Jordan says shoppers might roam a store armed with a wireless bar-code scanner attached to a personal digital assistant, selecting items for home delivery by the store. "It's a fuzzy hybrid," he says. "My order is going in over IP, but I'm not at a Web browser. That's why wireless is so exciting."

- Gary H. Anthes

nology, but from a consumer standpoint, there's been a backlash," he says. "Our research has shown that an animated [graphic] will hurt your credibility."

John M. Jordan, a principal at Cap Gemini Ernst & Young Group in Cambridge, Mass., says the major development activity for many Web retailers during the next two years will be integrating online operations with back-end systems and off-line sales channels. "The integration challenge is hitting a lot of people," he says. "Even some of the largest and most advanced online retailers have a lot of duct tape behind the scenes."

Instead of duct tape, Martha Stewart Living Omnimedia Inc. in New York used Consumer Commerce Suite from Art Technology Group Inc. in Cambridge, Mass., to tie together its four major businesses. "We built a data mart for all the information about our customers from magazine subscriptions, television viewers, buyers of our books and people ordering through catalogs," says Raffaele Piscacane, vice president of Internet development at Martha Stewart. "We integrated this through a single view, and we leverage it through our Internet channel."

For example, Piscacane says, Martha Stewart's online system can generate e-mails to people whose magazine subscriptions are about to expire, or it can flash an expiration warning to a subscriber who happens to be shopping or looking for information online.

Secaucus, N.J.-based Matsushita Electric Corp. of America has an even tougher integration challenge: how to tie its Panasonic Web site to the inventory systems of the retail chains that sell Panasonic gear. "If your Web site sends someone to a dealer down the street that doesn't have the model they are looking for, they'll buy something from someone else," says Tom Popp, eBusiness applications manager.

Illustration: Peter Glick

Illustration: Stephen Sharp



**MARTHA STEWART'S** Web site taps into a warehouse of data on the company's TV viewers, book buyers, magazine subscribers and catalog shoppers and ties it all together online.

The Panasonic Web site now lists those stores that have received a shipment of the requested item within the past two weeks. "That's about as close as we can get right now," Popp says. Developing a real-time online inventory capability for a dozen major retail

### Tips of the (E-Retail) Trade

- **Make your Web site more than an online catalog.**
- **Think about credibility. Details count.**
- **Develop links to off-line systems such as inventory.**
- **Integrate information from all your sales channels.**
- **Develop more powerful search capabilities.**
- **Investigate wireless applications.**
- **Think about a move to open standards.**

chains is one of two major projects under way at Panasonic now, he says.

When wine seller NextWine LLC in Napa, Calif., built its e-commerce site two years ago using IBM's WebSphere Commerce software, it insisted on providing real-time inventory views to its shoppers, even though few online retailers did that. But at the time, NextWine couldn't afford an automated inventory system, so it manually posted stock balances on some 5,000 items to the Web site so that the site always showed current stock on hand.

But the company recently migrated from the Windows NT version of WebSphere to the Linux version, NextWine President Dain Dunston says. Linux and other open standards such as XML made it easy to interface the Web site to a new automated inventory system.

The inventory system will automatically post XML-compliant inventory updates every 10 minutes to the Web site using a very simple interface, Dunston says. "Because it's an open system, we were able to do this for an extraordinarily low cost," he says.

A few of IBM's e-commerce customers use Linux, "but we are getting much larger demand going forward," says Bart Launbach, IBM's director of WebSphere Commerce software. He says small companies are attracted to the low cost of integrating standards-based systems, while larger companies especially like the scalability of Linux. ■

### SHOPPERS' WORLD

An IT exec. at TV shopping channel QVC Inc. discusses the ups and downs of online shopping technology.

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Users are turning to new services to make sure they're dealing with trustworthy businesses for online transactions. By Bob Violino

# Building B2B Trust

**T**HE NEED TO TRUST business partners is nothing new. For many years, financial services and credit-rating firms have provided services to check credit, hold monies in escrow or determine the long-term financial viability of businesses.

But establishing trust is different when buying and selling is conducted over the Internet. How do you know you're dealing with a legitimate business that will pay its bills, especially given that online transactions are performed with little human intervention? And how do you know that an electronic transaction is secure and that the trading partners at the other end are who they say they are?

Concerns about trust have kept many companies from taking part in or expanding their online business-to-business trade. In a survey of 60 procurement agents at U.S. companies conducted by New York-based Jupiter Media Metrix Inc. last year, 49% of the agents said a lack of trust prevented them from buying goods and trading online more frequently.

"In the online world, establishing trust with your trading partner is important; it's an issue that can't be ignored by either buyers or sellers," says Carol Rozwell, an analyst at Gartner Inc. in Stamford, Conn.

"In many cases, companies expect more stringent requirements from on-line partners than from off-line partners. We say that even in the early days of electronic data interchange," Rozwell says. "There are concerns for both trading parties about confidentiality and making sure there's a nondisputable and auditable trail of transactions."

Business-to-business buyers worry that they won't get quality products

delivered from a licensed vendor in the right quantity, at the right time and at the right price. For sellers, the worries include getting paid on time — or at all — and extending credit to unworthy buyers.

Technology and business managers are attacking the trust problem in a number of ways, using tools such as automated credit-checking applications and online trust services to determine the credibility of trading partners. They're also using the latest security technology to ensure that transactions are safe.

Transportation and supply chain management company Ryder System Inc. is using Instant Decision software from eCredit.com Inc. in Dedham, Mass., to automate the process of checking a company's credit. John Aleman, senior director of application strategy and development at Miami-based Ryder, says the company uses the product to evaluate the credit and payment history of customers for its vehicle-leasing and logistics services.

Using data gathered by the credit-analysis software, Ryder assigns a credit score, ranging from one for very low risk to five for high risk. Instant Decision incorporates existing customers' actual Ryder payment histories.

Ryder bases pricing of its services on the credit score, so a high-risk customer would pay more for a particular service than a low-risk company. Aleman says.

"The high-risk customers may go elsewhere if the price is not seen as competitive, but that's to our advantage," she says. "We are encouraging poor-credit customers to share the [risk] burden with us."

Aleman says Ryder, which has some 14,000 customers worldwide, expects increased annual revenue of \$6 million to \$10 million because of the credit-scoring application. How? By getting more revenue from the higher-priced services for high-risk customers, and by freeing salespeople from pursuing prospects that won't be able to pay.

The company has safeguards to ensure that it's dealing with ethical, reliable suppliers. Only those suppliers that Ryder has used and trusted for some time are placed on its Ryder-FleetProducts.com Web site, which is used internally for procuring parts for trucks. Ryder ships all of the products itself to ensure that the right products are delivered on time and in the right quantity. And the company has established metrics to measure the perfor-

Continued on page 35

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all this without any disruption. This standardized enterprise architecture allows you to seamlessly integrate voice, video, wireless, and data applications on a single, scalable network. This includes new and existing technologies alike. Whether you're building your enterprise network or extending it with Cisco Powered Network services, take advantage of the tools below to get it done right.

CISCO SYSTEMS

Enabling the  
Enterprise

## Building B2B Trust

Continued from page 32

mance of its suppliers in terms of product quality and timeliness.

To keep its online business-to-business transactions secure, Ryder uses digital certificates and authentication software to verify customer identities, as well as public-key infrastructure and encryption to protect the integrity of the transactions.

Air Products and Chemicals Inc., like many chemicals companies, does most of its buying and selling from customers and suppliers it's been dealing with for years or even decades.

Before sending any new customers a product, however, Allentown, Pa.-based Air Products sets up a customer profile, which triggers checks of the customer's financial qualifications, says Stefanie Wesler, e-business venture manager. These profiles are created using a combination of legacy systems, but the company plans to move this process to a customer relationship management tool in the future, a spokesman says.

For electronic trading with cus-

## Trading With Trust

■ Do the necessary background checks to ensure that prospective customers are legitimate businesses and that they are a good credit risk.

■ Combine external credit-rating services with your customers' histories of payments for products and services.

■ Encrypt all data in an online transaction, and make sure all trading partners use adequate encryption technology.

■ Use authentication and digital signature technology to verify the identity of trading partners.

■ Consider using a reliable, secure e-industry exchange for procuring goods and services.

■ Create a Web trading portal that allows only registered customers access to trading applications and information.

tomers, Air Products uses either its own APDirect trading portal or online trading hubs such as Wayne, Pa.-based Elemica Inc. With APDirect, only registered customers have access to transactional applications and information. Other firms are using Web-based tools to validate their trading partners. Freightquote.com, a Lenexa, Kan.-based provider of online freight management services, is using D&B Global DecisionMaker from The Dun & Bradstreet Corp. in Murray Hill, N.J. Corporate users access the Global DecisionMaker Web site for real-time recommendations on whether to grant credit.

When a new customer enrolls on the company's site to place an order, Freightquote.com connects via the Web to the Global DecisionMaker site and gathers information before setting a credit limit, which is based on the customer's financial profile and payment history for shipping services. If the company is a poor risk, it must pay in advance by credit card.

### Saving Time and Peace of Mind

Freightquote runs checks on about 30 business-to-business customers per day, says Yolanda Howard, financial project manager at Freightquote.com. "Before we used this system, we basically had an arbitrary way of defining credit limits," Howard says. "Now we're learning more about our customers and extending credit to those that are worthy and eliminating those that are poor risks. The main goal is to eliminate bad debt." Previously, the company had a time-consuming collections process for poor-credit customers, she says.

Phillips Petroleum Co. in Bartlesville, Okla., in another company that's handling the trust issue by trading exclusively with partners it has had for years. "Because of that, there's already a built-in trust," says Del Clark, manager of IT exploitation at Phillips.

"We already have an ongoing relationship with the customers and suppliers we do business with on the Internet, so trust is not really an issue," says Kirk Drummond, CIO at Sysco Corp., a Houston-based distributor of food products.

"Our sales and marketing people qualify all new customers by doing the necessary credit reviews," Drummond says. "After they've been approved, we

make our order-entry systems available on the Internet. We do the same with suppliers."

Whether they check out trading partners the old-fashioned way or by using new online tools, many man-

agers agree: There's too much at stake to take business-to-business trust for granted. ■

Violino is a freelance writer in Massapequa Park, N.Y.

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KEVIN FOGARTY

# E-Future Lies in The Back Office

**F**OR THE PAST FEW WEEKS, I've been searching for an image, a nuance, a breakthrough — anything that would give me an indication of what the next generation of e-business is really going to look like.

I eventually came to the conclusion that there won't be a next generation of e-business. Not as such, anyway.

Like most successful revolutions, the e-business revolution was won not by the people who fought it, but by those who took over after most of the blood was shed. The dead (some of whom are memorialized at [www.dianbey.com/jhusites](http://www.dianbey.com/jhusites)) stood for egalitarian connections between buyers and suppliers, as well as unrestricted commerce among everyone from multinationals to mom-and-pop stores.

The living won with brand awareness, infrastructure and enough flexibility to adapt — barely — to changes in the business world that were so vast that financial empires rose and fell in response to them.

That's mostly over now. Businesses have absorbed e-commerce's lessons so completely that e-business is as much a part of regular business as customer service, direct mail or manufacturing management.

## Low-Level Concerns

Pure e-business concerns these days are a bit ho-hum, to tell you the truth. The big fights are about intellectual property, privacy and how strict the regulations will be, not whether companies live or die. Incremental improvements are, of course, continual, just like in any other business function. Web sites become increasingly easier to use, and marketers become smarter about how to use them.

But the real changes these days aren't on the business side, or even among the pony tails who maintain the Web. They're among the more stand folks in the data center who are being called on to make Web sites as reliable and as cheap to operate as the back-office operations they've had years to perfect.

Sophisticated IT operations are building into their Web structures features such as dynamic server partitioning and Interprocess Communications protocols to give their Web forms, greater power, flexibility and connectivity.

They're streamlining the one-application, one-server Web model by consolidating servers, then allocating to each application the memory and CPU capacity it needs, but no more than that. It's a way to deliver maximum horsepower without wearing out the horse.

Other IT staffs are building powerful, flexible computing architectures using application servers, middleware and N-tier applications that take advantage of the distributed-computing model better than old-fashioned client server ever did.

Nuts and bolts stuff. Hardly the kind of project you'd see profiled in

*Forbes*. Or even in *Business 2.0*.

The next generation of e-business won't really be e-business at all; it will be mainly IT. And that's a good thing, for both business and IT.

When I started this column three years ago, there was no obvious a need to inject technology into the business process that even the most hidebound executive understood the need, if not how to satisfy it. Now, in my last column for *Computerworld*, I find it incidentally convenient that the pendulum has swung back the other way.

## Alignment Is Simpler

Business folk have assimilated all the technology they can handle and are pushing responsibility for the more important technology back where it belongs — to the hard-core specialists in IT. But this time, the perennial problem of how to align IT with the needs of the business is much simpler, because the connection between IT and business is so much closer.

E-business isn't IT, and IT isn't e-business. Those two got very confused during the revolution. They're distinctly separate, though more intertwined now than ever.

It's that combination, and what it can accomplish, that I personally continue to find so fascinating. It's

an ongoing miracle of balance among consumer demands, user wish lists, tight budgets and the limits of technology that you, the IT people, manage every day. It's a balance on which I'll continue to focus, elsewhere.

Good luck with your miracles, and thanks for your time. It's been a pleasure writing about you. ☐



KEVIN FOGARTY is editor at IT consultancy Burnetta Inc. in Nashua, N.H. Contact him at [kfogarty@burnetta.com](mailto:kfogarty@burnetta.com).

## SNAPSHOTS

### Who's Right?

Market researchers have higher estimates than the U.S. Department of Commerce for total U.S. retail e-commerce sales in 2001.

#### SALES ESTIMATES IN BILLIONS



**NOTE:** Researchers use different definitions of retail e-commerce. The Commerce Department doesn't include travel, while many other researchers do.

SOURCE: U.S. DEPARTMENT OF COMMERCE, DELLOITTE, JAPAN, MARKETPLACE, FORRESTER, Y. BAKER, Q. A.

## E-Loyalty

Key drivers in the loyalty of online food shoppers, ranked by order of importance:

1. Ease of product return
2. Timeliness of delivery
3. Web site navigation
4. Product availability
5. Price
6. Product information

SOURCE: NATIONAL FOOD RETAILERS ASSOCIATION, 2001



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SALES ESTIMATES (IN BILLIONS)



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SOURCE: ENVIANTER INC., NEW YORK; JANUARY 2002; U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, FEBRUARY 2002

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SOURCE: STUDY PERFORMED BY THE UNIVERSITY OF CALIFORNIA, BERKELEY, AND THE UNIVERSITY OF CALIFORNIA, SAN DIEGO, MAY 2001



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**W**HEN RETAILERS jumped on the e-commerce bandwagon in the late 1990s, spinning off e-business units and leading off on bleeding-edge technologies, Milwaukee-based Master Lock Co. ignored the hype.

It wasn't because the 80-year-old company refused to change its Old Economy ways. In fact, e-commerce has been on its master plan since 1999. IT and business leaders were simply determined to do things right—the first time. “We made a conscious decision to go slow, so we could use one system, as opposed to building a disparate e-commerce system and then trying to find ways to link it back to our main systems,” says Matt Gahman, director of e-commerce and customer solutions.

Master Lock had a bigger problem in 1999: an antiquated supply chain strategy. So it began a three-year project to expand its supply chain globally and standardize its front- and back-end systems on Oracle Corp.'s E-Business Suite III.

Today, with most of the IT platform in place, Master Lock will launch its first e-commerce offering to business and commercial clients next month using Oracle's iStore application. Despite being a latecomer to e-commerce, IT director Jim Johnson says the IT advantages of waiting to launch Master Lock's offering far outweighed any early-adoption benefits.

The integrated modules “allow us to leverage the data and not have redundancy, which translates to cost savings and accuracy,” Johnson says. Although integrated systems were available years ago, they would have been risky and cost-prohibitive, he adds. Also, IT staffers can easily move among projects because they share the same skill sets.

For companies such as Master Lock that don't have tech-savvy competitors hot on their heels, a slow and steady e-commerce strategy can mean significant IT cost savings and more reliable technology.

For some industries, “there's no problem with being late” to e-commerce, says Andrew Bartels, an analyst at Cambridge, Mass.-based Giga Information Group Inc. For established brands, the majority of business will still come through traditional channels, and brand-loyal consumers will wait for e-commerce offerings. In turn, IT departments can take advantage of better technology, lower prices and lessons learned from others' e-commerce mistakes.

“This is a much better time to buy,” says James Crawford, a retail analyst at Forrester Research Inc. in Cambridge, Mass. “First, a lot of e-commerce vendors that were flying high two to three years ago are in much less of a position to offer premium prices.” Second, budget pressures are forcing vendors to make e-commerce and enterprise resource planning

## Some companies find big IT advantages to being e-commerce latecomers.

By Stacy Collett



### Advantages of A Late Start

- Vendors have had time to offer integrated software packages, so integration with back-office systems is much easier.
- E-commerce systems are much cheaper now than they were in the dot-com boom.
- Users have learned lessons from the dot-com failures, such as the importance of strong project management.

(ERP) systems more compatible. So the cost of implementing e-commerce as a function has dropped. “As a result, you get the same functionality for a lot less,” Crawford says.

Chief Technology Officer Joe Hardman, who is testing e-commerce on the Web site of Catherine's, Plus Sizes apparel stores, a division of Bensalem, Pa.-based Charming Shoppes Inc., says implementing a 100% Microsoft Corp. platform with a Microsoft Great Plains Business Systems ERP based is a bargain at less than \$5 million. “We wouldn't have done it a couple years ago because it was impractical and cost-prohibitive,” he says. “On the downside of the bubble was the right time to do it.”

Charming Interactive, which handles Web site IT and business planning for Catherine's, Fashion Bug and Lane Bryant plus-size women's apparel stores, is taking a methodical, three-phase approach to launching e-commerce capabilities one site at a time.

First, a site offers “content and community” with fashion tips and store locations. Next, window-shopping is added to let customers see the fashions available at the store. Months later, the site launches a pilot e-commerce offering with limited inventory that relies on “walk-in” browser traffic instead of promotions.

Hardman says he doesn't feel pressured to get to market quickly because plus-size fashion consumers are still underserved in the online marketplace.

Hardman and his IT team have learned valuable lessons from the failures of other e-commerce sites. For example, Internet projects are no different from any other IT effort—they require diligence and strong project management, he says. They have also learned the importance of using the same IT systems, purchasing and distribution channels for both online and brick-and-mortar stores. “It's an integrated effort. We're not duplicating any effort,” says Hardman.

Despite the benefits of waiting to implement e-commerce, consumer adoption rates in many industries remain disappointingly low. With online spending representing just 2% of overall consumer spending last year, companies will have to justify their Web costs in other ways. “The goal of e-commerce is never to make it the dominant channel for sales,” Bartels says. “The goal is to reach customers who you might otherwise not reach, and to get to know more about the customers you do have.” ■

Collett is a freelance writer in Sterling, Va.

### ELUSIVE PROFITS

The cost of merchandise shipping or added staff can make e-commerce an unprofitable fit for some businesses.

QuickLink: 28726  
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# Slowpokes!

## Cabela's sells off goods to the right buyer at just the right time. By Pimm Fox

**P**ERSONALIZATION TECHNOLOGY is helping plenty of Web retailers create customized electronic shopping boutiques whose inventory and pricing can vary from shopper to shopper online.

At Cabela's Inc., a sporting goods retailer in Sidney, Neb., it's also helping to boost supply chain efficiencies across all three of the company's sales channels: stores, catalog and online. The same technology that tracks individual customer preferences and shopping habits is increasing inventory turns and revenue, all within the context of building a branded experience, says Tim Miller, director of Cabela's.com.

The focus on personalization technology fits with Cabela's overall strategy of one-to-one customer service. This applies in its eight stores as well as at its call center, which handles catalog orders placed over the telephone plus all customer queries, regardless of where or how the customer shops.

The majority of customer information culled from the call center, catalog orders and in-store visits is collected via a PC-based application and then stored in a data repository hosted on the company's IBM AS/400. Miller says he saw no need to duplicate the repository when Cabela's launched its Web commerce site in November 1998.

Instead, he wanted an e-commerce platform that plugged into the existing infrastructure used to service other Cabela's customers. Ultimately, Cabela's opted to install an out-of-the-box version of Cambridge, Mass.-based Art Technology Group Inc.'s Dynamo online commerce application with its personalization engine.

Miller used established application programming interfaces to link the call center and catalog sales information with customer information generated via the Web site and other back-end information, such as order fulfillment data.

The effort will eventually let in-store personnel view a customer's complete profile. For example, an in-store employee might notice that a customer previously purchased a particular type of hunting rifle



### Cabela's Inc.

Location: Sidney, Neb.

Founded: 1961

Business: Retailer of hunting, fishing and outdoor gear

Status: Privately held, family-owned company

Number of employees: 5,000

Retail channels: Eight stores, catalog operation, Cabelas.com Web commerce site

www.cabelas.com

and that there is now new product information to be conveyed. This single view of the customer will also give Cabela's salespeople an opportunity to sell shoppers other goods and services related to their interests and past purchases.

For online shoppers, the automated e-commerce system can alert them when particular items in their sizes are priced at closeout. As a result, Cabela's is able to cut costs and clear out excess and odd-lot inventory by advertising via e-mail rather than the Postal Service. Advertising sent via the U.S. mail doesn't reflect real-time inventory conditions as the e-mail ads do.

Integrating customer and shopping data from all channels into a single repository helps keep the Cabela's brand experience dynamic, a crucial factor in e-commerce success, according to Geri Spieler, an analyst at GartnerG2 in San Jose.

"The challenge for an online store is to give the shopper a consistent brand experience and a great online customer experience, particularly if the store has a physical or multichannel presence," Spieler says.

Using personalized e-commerce to unify the various channels has also generated hundreds of millions

of dollars in incremental revenue at the privately held retailer, Miller says. After browsing Cabelas.com, "people are better informed when they come into the stores," he says. "They're ready to make a purchase, and we're able to recognize their individual spending habits."

Giving online customers the option to receive information about the more than 100,000 products in Cabela's inventory is possible because Miller and his 52-person team created an IT architecture that includes more than just shopping.

Customers can receive pretty much any kind of product, pricing, shipping and other information they need — even if they don't request it. For example, the system lets customers know if the specifications of an item have changed or whether there is something wrong with a product's sizing. It also automatically alerts customers to changes in shipping times and permits online live chat to help customers resolve order or delivery issues.

Gene Alvarez, an analyst at Stamford, Conn.-based Meta Group Inc., says retailers that had a catalog business prior to establishing an e-commerce operation have an advantage in personalization because the retailer is accustomed to communicating with customers when they're not face-to-face.

"They've learned how to use the mailing model to target customers, so using e-commerce tools to do similar things isn't a far stretch," Alvarez says.

The personalization technology involves the products as well as the customers. For example, because there are many government restrictions on the sale of hunting paraphernalia, the ability to tailor product data based on customers' geography helps Cabela's provide shoppers with the appropriate information.

"There is a correlation to the type of technology and the type of product," says Alvarez. "Not all products are sold equally."

The bottom line, he says, is that personalization technology can enhance the customer experience and deliver operational efficiencies like increased inventory turns. What the Cabela's example shows is that getting those returns involves fully integrating the technology with the overall retail experience, not just your e-commerce site. ▀

### UNDER THE COVERS

Cabelas.com seamlessly integrates a variety of technologies to duplicate online the experience of its store and catalog shoppers.

Circle 10  
 Q: What's the URL?  
 A: www.cabelas.com

# Getting Personal Boosts Revenue



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BY ROBERT L. SCHEIER



## How to Choose

### FIELD NOTES

If you're doing basic e-commerce and want a safe vendor, IBM's Websphere Commerce server or Microsoft Corp.'s Commerce Server may be good enough, analysts say. For more complicated or industry-specific needs, look to smaller, more financially fragile vendors.

For example, "neither IBM nor Microsoft have very strong order-management" capabilities, says Larry Perlstein, an analyst at Gartner Inc. in Stamford, Conn. Compucon Technologies Inc. in Redwood City, Calif., "is probably one of the strongest players" in this area, he says.

The nature of your e-business dictates how fancy you need to get. Few companies just accept an incoming order, check if inventory is available and process the payment, according to a December 2001 report by Forrester Research Inc. in Cambridge, Mass.

Most must capture orders from multiple channels, query inventory systems and trigger complex fulfillment processes. The more often a firm fulfills, with pricing or product bundling, the more flexible a pricing engine or catalog management system it needs, says the report.

Some commerce servers are also geared toward specific industries. Comergent has a large customer base in high-tech manufacturing, says Perlstein, while Blue Martini Software Inc. in San Mateo, Calif., "has a strong retailing focus and is starting to focus more on manufacturing." Retailers might want to consider commerce server offerings from vendors such as SAP AG,

Siebel Systems Inc. and PeopleSoft Inc. or from retail software vendors such as Retek Inc. and JDA Software Group Inc., says Andrew Bartels, an analyst at Cambridge, Mass.-based Giga Information Group Inc.

### MORE ANSWERS

For a Q&A with EDSS' Sean Wiley, plus lots of online links. QuickLink: 30286 [www.computerworld.com](http://www.computerworld.com)

## How's Your Server Vendor's Economic Health?

### ISSUES

With the consolidation of the commerce server market, the financial viability of the vendor has become a key criterion that you should consider when choosing a commerce server.

"One of the first questions we ask our clients is how risk averse are they?" says Larry Perlstein, an analyst at Gartner Inc. in Stamford, Conn. "The answer to that determines how they should go through the vendor selection process," determining whether the specialized capabilities of a smaller vendor justify the risk that the vendor might go out of business or be acquired, he adds.

Most commerce server vendors are under "tremendous financial

pressure," says Perlstein, making it likely "several of them will not survive the next 18 months." In April, BroadVision Inc. announced that it would cut about one-third of its 970 employees after last-quarter sales fell 36%, to \$30.5 million, from the same period a year earlier. Cambridge, Mass.-based Art Technology Group Inc. reported sales falling to \$27 million in the quarter, from \$43 million in the same period a year earlier.

Stock price isn't a good indicator of survivability, says Perlstein. "Because all of the stock prices have been so depressed," customers should instead examine such things as a vendor's burn rate - how quickly it's using its available cash - and the number of customers it has gained in the most recent quarter.

### SURVIVAL INDICATORS

■ Vendor's burn rate (how quickly it's using available cash)

■ Number of customers it has recently gained

# Where'd

## The Case of the Disappe



## How to Choose

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For a Q&A with EBS's Sam Wiley, plus lots of online links: [QandA.cio.com](http://QandA.cio.com) 36298 [www.computerworld.com](http://www.computerworld.com)

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# Where'd

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## Bye-bye to Specialist Software: Commerce Serving Goes Mainstream

### TECH CHECK

The market has plenty of good, solid commerce servers. Too many. In fact, because vendors such as BroadVision Inc. in Redwood City, Calif., and Blue Martini Software Inc. in San Mateo, Calif., are threatened by "infrastructure vendors" that also offer application servers, middleware, databases and CRM systems.

Commerce server software runs on application or Web servers and provides key e-commerce functions such as managing product catalogs, accepting and processing orders and personalizing pricing and other content based on a customer's identity or purchase history. As Web commerce has gone mainstream, such functions are increasingly integrated into broader offerings from infrastructure vendors or into other applications.

"Only one or two of the companies that began as commerce server vendors — most likely, [Art Technology Group Inc.] or BroadVision — will survive after morphing into a CRM or portal vendor," says Andrew Bartels, an analyst at Giga Information Group Inc. in Cambridge, Mass.

IBM and Microsoft Corp. are the current market leaders, according to a December 2001 report by Forrester Research Inc. in Cambridge, Mass. Their tools offer solid marketing, order processing and catalog management tools, the report says, adding that users look for the following features in e-commerce server software:

**Integration.** This is key to users like Rockwell Automation Inc., a Milwaukee-based supplier of power, control and industrial systems. Rather than requiring a half-hour sales call to configure products, customers use a BroadVision server to do the configuration online, says Rod Michael, director of customer e-business at the company. And Rockwell's 550 North American distributors are also linked to the site, so they can query one another for hard-to-find items.

**Sophisticated analysis tools.** Site performance-analysis tools should support Simple Network Management Protocol so they can work with Hewlett-Packard's OpenView or other monitoring tools, says Forrester analyst Josh Walker. Tools for analyzing customer behavior should be smoothly integrated into the commerce server so that employees can more easily do business analysis, he says.

Eric Keil, e-business director at Panasonic Management IT Services Co. in Secaucus, N.J., is working with IBM so that future WebSphere releases allow attachment of documents, diagrams or even software to product descriptions. This would not only help cross-sell or upsell related products, he says, but also increase customer satisfaction by ensuring they get the products they want.

**Flexibility.** Because BroadVision was originally built for business-to-consumer sales, says Michael, "we had to work with them a lot" to let business

customers specify that different products in an order be shipped by different carriers or to different places.

Competition and reduced demand have reduced prices. Microsoft dropped its per-CPU price for Commerce Server 2002 Standard Edition to \$2,000, compared with \$8,499 for Commerce Server 2000, says Bartels. BroadVision dropped its entry-level pricing from about \$500,000 to \$120,000, he says, and BEA Systems Inc. in San Jose is bundling its commerce server into its portal offering at no extra charge.

As product categories merge, vendor mergers might not be bad either. "It would be great to see someone like [CRM vendor Siebel Systems Inc.] link up with [BroadVision]," says Michael. "The worst thing that will happen is [BroadVision] gets acquired by somebody, and we'll just have more capabilities." ▀

Schrier is a freelance writer in Boylston, Mass. He can be reached at rschrier@charter.net.

**BUSINESS:** Power, control and industrial systems, automation software

### CASE STUDY

**REVENUE:** \$4.3 billion (fiscal 2001)

**BUSINESS GOAL:** Provide single point of contact to reduce customers' purchasing and administrative costs. Cut cost of sales by providing online product configuration.

**COMMERCE SERVER USED:** BroadVision

**WHY CHOSEN:** Scalable architecture, personalization capabilities, ease of customization

**STRENGTHS:** Easy to use for employees and customers; high-availability architecture

### PROBLEM AREAS:

BroadVision Inc. is a product-focused business-oriented features such as the ability to include unique shipping information for each item ordered. Technical support from BroadVision was weak at first but has improved in the past year.

**BUSINESS RESULTS:** The site saves customers an estimated 24% of total purchase costs by cutting internal paperwork. The online configuration reduces the need for expensive sales calls and allows Rockwell's salespeople to focus on boosting revenue.

**DEPLOYMENT LESSONS LEARNED:** Be specific about what you ask your vendor. For example, BroadVision supports double-byte characters required by Asian languages but not multiple double-byte character sets, making it hard for Rockwell to handle multiple Asian currencies on one site. Poor communication about new processes for e-commerce caused confusion among Rockwell's sales force, distributors and customers.

**“If you automate a mess, you get an automated mess.”**

**ROD MICHAEL, DIRECTOR OF CUSTOMER E-BUSINESS, ROCKWELL AUTOMATION**

# They Go?

## Comparing Commerce Servers

# Measuring Web Site Traffic

## DEFINITION

**Web site traffic** is measured in many ways, including analysis of server logs and user tracking. Using an outside measurement service is another option. Reported traffic numbers typically include unique visitors (the number of different people who have come to a site) and page views (how many pages have been requested and loaded by a site's visitors in a given time period).

BY SHARON MAGNUS

**I**N THE beginning, there were hits. Today, hits are largely discredited as a measure of Web site traffic, since they count individual files served up. A single Web page can account for a dozen or more hits if it has a lot of photos, while a text-only page could generate just a single hit.

These days, the Web-craft talk of metrics such as page views, ad impressions and unique users. But don't be fooled by precise-sounding terminology and numbers. There are no many ways to define and count Web visits that traffic measurement is as much an art as it is a science.

For example, what counts as a page view? Is it when a Web page is first requested? When content has completely finished loading? Or when a tracking pixel—a tiny file placed on a page specifically for counting page views—is called? Such distinctions are important to Internet ad buy-

ers, because the numbers can differ depending on the definition used. Consider the impatient user who requests a page but then hits Back or surfs elsewhere before that page—and its ad—loads.

Search engines complicate the problem. Their automated software "robots" scour the Internet and index sites. IT staffs monitoring server load may need to factor in robot activity for capacity planning, but site operators must filter it out to get an accurate count of how many real people are visiting a site.

Finding and discarding activity of known robots such as Mountain View, Calif.-based Google Inc.'s is only one step in factoring out Web crawlers, notes George Irie, executive director of New York-based Media Rating Council Inc., a trade organization seeking to develop and enforce audience measurement standards. Ideally, he says, analysis would also check for obvious automated activity, such as a visitor from

the same IP address who clicks through 10 pages per second. Trickier still are internal users. Should IT staffers at Seattle-based Amazon.com Inc. be counted as visitors if they're testing an updated part of the site? Probably not. But what about the receptionist who surfs to buy a gift?

## Soft Numbers

One of the softest Web numbers is the tally of unique visitors per month. For sites that require registration and log-in, it's fairly simple. But the rest must depend on other devices, ranging from analyzing server log files to using cookies, which are small pieces of data stored in a user's browser that can be accessed by a Web site the next time that user visits.

Web site operators usually get information about site traffic from their own server logs, an outside online advertising company such as New York-based DoubleClick Inc., or a third-party rating service. Major sites typically use a combination of sources.

"We track all the page views internally that we get. We also double-check it with our ad server, DART," says Jim Candor, vice president for new media at AccuWeather Inc. in State College, Pa., which recently announced that it had surpassed 1 billion page views. DART is an ad-serving technology from DoubleClick that lets online staff set up when and where ads appear on a site; it also measures how many people view each ad.

Numbers from AccuWeather's server logs showed only a "slight discrepancy" with the DART figures, within a percentage point or two, Candor says. How did AccuWeather tally up 1 billion pages viewed over the site's history? "We

track each type of page internally, we put a 1-by-1 spotlight [tracking] pixel internally," he says. The count began at the site's December 1997 launch.

In addition to using outside rating services, log file analysis is also quite useful, says Jeff Julian, president and publisher of IDG.net, a Computerworld.com sister site. It lets him see what people do after they arrive at a site. Server logs usually record each visitor's domain or IP address, browser type and files requested. Web site staff can then use commercial log analysis software or homebrewed code to sift through the raw data and pull together the statistics they're seeking.

Sites that don't require user registration use various techniques to estimate how many unique visitors—different individuals—are arriving each month. Some check to see whether there's an existing cookie; if not, the first-time visitor gets a cookie with a unique user ID. Then, if the user returns, the site knows he was there before.

The New York-based Inter-

active Advertising Bureau recently took a first crack at developing online audience measurement guidelines, issued in January. In them, the group defines visits and page impressions and presents proposals to deal with page caching and to filter out "nonhuman activity."

Ivie says that ultimately, he would like to see both internal Web sites and outside measurement agencies submit to external auditing, just as newspapers do for circulation claims. So far, he says, Atlanta-based CNN.com is the lone major consumer site that has submitted to Media Rating Council auditing.

"The major problem is there's no accountability in the Internet environment," Ivie says. "Our members struggle trying to figure out what numbers to rely on."

## OTHER TRAFFIC COUNTS

Online Resources: For use on Web site traffic tools, see [QuickSite:30278](http://QuickSite:30278).  
Cookies, Anyone? Everyone knows about cookies. Or do they?

QuickSite:30284  
[www.computerworld.com](http://www.computerworld.com)

## Reading Server Logs

This is a typical server log entry. Log analysts endeavor to usually need to read each entry and make up their own usage statistics, but here's how to read a new log entry.

12.345.67.89 --- [14/May/2002:02:22:37 -0500]

"GET /web/quickstudy01.NSF/016647-72.00.html

HTTP/1.1" 200 2736 "http://www.idg.net/" Mozilla/5.0

(compatible; MSIE 6.0; Windows NT 5.0; T302480)

12.345.67.89: The visitor's IP address (changed in this example to protect the user's privacy).

---: The user's log-in (left blank for sites that don't require log-in).

[14/May/2002:02:22:37 -0500]: Date and time the user arrived.

"GET /web/quickstudy01.NSF/016647-72.00.html HTTP/1.1":

Page the user requested.

200: Status code of the user request. Codes starting with a 2 mean the page was successfully retrieved. Codes starting with 4 indicate a problem, such as the "404 page not found" error.

2736: Number of bytes transferred.

"http://www.idg.net/": Referring Web address. This shows up if the user arrived at the requested page by clicking on a link from another page. It will be blank if the user typed in the Web address manually.

Mozilla/5.0 (compatible; MSIE 6.0; Windows NT 5.0; T302480): Information about the user's browser and operating system.



**H**OW QUICKLY does your company respond to customer e-mail? In a recent "mystery shopping" test, Chicago-based The E-Tailing Group Inc. rated 100 online retailers in categories including speed, accuracy of information and ease of use.

We checked in with two companies that earned five-star ratings: KBtoys.com and Drugstore.com Inc. In addition to strong overall showings in the study, both businesses responded to e-mail in less than four hours on average. Here's how they do it.

#### KBtoys.com

A division of KB Holdings LLC, Pittsfield, Mass.

[www.kbtoys.com](http://www.kbtoys.com)

■ **Quick take:** KB Holdings is the parent company of both KBtoys.com and eToys.com, so incoming e-mail must be split and customized by brand. Because toy retailing is a seasonal business, "we scale in a hurry," says Jim Scherman, vice president of customer care and operations. "We needed a tool [customer service representatives] could learn quickly."

■ **How many?** The company receives thousands of e-mail messages per week during the holiday rush but only hundreds per week the rest of the year.

■ **How fast?** In the E-Tailing Group Mystery Shopper Survey, KBtoys.com answered e-mail in three hours, 22 minutes, on average — the fourth-best of the 100 online retailers tested. (The top three performers were Nordstrom Inc., Bluelight.com and Lands' End Inc., respectively.)

■ **Technology:** KBtoys.com uses a pair of in-house applications called Customer E-mail Management System (for e-mail alone) and Customer Interaction System (for other channels, such as voice). Built on top of an Oracle6i database, the tightly integrated systems are browser-based for easy training and use.

The key to efficient e-mail response, according to both analysts and users, is to automate as many processes as possible. "We wanted as much [artificial intelligence] as we could get before an e-mail touches a customer service rep," says Mark Anton, director of customer care applications and lead architect.

To that end, KBtoys.com developed algorithms and set pattern-matching criteria. For example, with few exceptions, the company doesn't ship outside the U.S. So when the e-mail response software recognizes words and phrases indicating foreign shipping is being requested, an automated response is personalized and sent out. Anton says 25% to 40% of all incoming e-mail is answered this way.

■ **Payoff:** "Two years ago, almost every order generated a contact to us," Scherman says. The contacts-per-order ratio is a critical measure of not only an e-business's e-mail response, but also of its opera-

tional efficiency as a whole; after all, if the fulfillment or shipping department isn't up to snuff, angry e-mail from customers will surely follow.

Contacts-per-order is also a closely guarded secret at most companies. Scherman won't reveal what KBtoys.com's ratio is, but he says the company has been able to "drive it down substantially" since implementing the new e-mail response tools.

■ **Next steps:** Toys on KBtoys.com's enhancements list is tighter integration with other enterprise applications. "We want to automate processes that are still manual," such as credit processing, says Anton.

#### Drugstore.com

Bellevue, Wash.

[www.drugstore.com](http://www.drugstore.com)

■ **How many?** The site receives between 2,000 and 5,000 customer e-mails per week, depending on the season (holidays being the busiest).

■ **How fast?** Drugstore.com averaged responses in three hours, 42 minutes, which landed it in fifth place, just behind KBtoys.com.

■ **Technology:** Drugstore.com built its own "gateway" application that performs the first screening of all incoming e-mail. This tool generates an automated response to as many queries as possible. "And even if it can't actually be answered automatically, we parse it to see what it relates to," says Scott Green, senior technology director. After parsing, messages are funneled to director, an e-mail management tool from Kana Software Inc. in Menlo, Calif. Green praises Kana's ease of use, a vital factor in the high-turnover world of customer response.

"During the holidays, we pull people in from all over the organization to help" the customer service reps, he says. "They can be up and running in 15 minutes."

■ **Little-known fact:** Among the keywords Drugstore.com scans for are profanities. "That would classify the item as a flame e-mail," which receives high priority, Green says. The idea is to mollify angry customers as quickly as possible.

■ **Payoff:** Drugstore.com won't say how much it spends on e-mail response. But because it's an online-only business, Green says, e-mail is even more important than it might be to a brick-and-mortar company.

■ **Next steps:** Green and his team never stop tweaking the in-house component of the software. He says parsing and triaging are the key components in lowering the all-important contacts-per-order ratio. "On the inbound side, that's the name of the game," he notes. As for the outbound side, Drugstore.com has created a sophisticated direct e-mail system that tracks customers' purchase histories and clickstream habits and then creates personalized messages enticing them to buy products that interest them. ■

Ulfelder is a freelance writer in Southboro, Mass.

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#### SERVING CUSTOMERS ONLINE

Chat is cheaper: Instant messaging, or "chat" support, is a low-cost alternative to e-mail. But turning phone agents into chat agents has its hurdles. **QuickLink: 29000**

**Ready With Answers:** Autohelp and Xerox have to respond to e-mail from business partners and enterprise customers, not just consumers.

**QuickLink: 29000**  
[www.computerworld.com](http://www.computerworld.com)

These companies respond to customers' e-mail with lightning speed. Here's a look at the technology that makes it happen.  
By Steve Ulfelder

# Fast Answers

**M**OST E-COMMERCE SITES REBUT at least 70% of the customers who visit them, panning up millions of dollars in potential sales. Even the best retail Web sites are doing only half the business they could be doing, researchers say. The culprit: poor Web site usability.

"E-commerce sites offer a simple way to prove when you're [doing it] right: Measure sales," says Jakob Nielsen, co-founder of Nielsen Norman Group, a Web site usability design consultancy in Fremont, Calif.

Although software tools measure some Web site activities, nothing beats "watching people shop to gauge the failure or success of a site," Nielsen says.

"When executives of an e-commerce site see half their customers leaving because they can't shop, that's pretty compelling," he says.

Nielsen's report, "E-Commerce User Experience," lists 207 design guidelines based on usability tests of 20 e-commerce sites.

But even the experts don't agree on what makes a Web site great for customers.

"There are no guidelines," says Jared Spool, author of the report "Web Site Usability: A Designer's Guide."

"We've never seen a site that does everything right; no one even knows what that is. The best Web sites never get more than a 42% success rate," Spool says.

The best-performing Web sites, such as those of Seattle-based Amazon.com Inc. and San Jose-based eBay Inc., are mostly test, Spool says. "But no designer would make up a site with mostly test," he notes.

Well-designed graphics are no predictor of success, Spool says. "Graphics aren't intended to move people" through the site, he says. "If anything, they're intended to stop people and get their attention."

"Of all the graphic design elements we looked at, the only one that was strongly tied to user success was use of browser default link color," says Spool, founding principal of consultancy User Interface Engineering in Bradford, Mass. The color scheme that's most common — and most easily recognized by users — is blue for unfollowed links and purple for followed links.

## Tips for Web Shopability

- 1 Show the full product cost as soon as possible.
- 2 Explain why you need to collect personal information.
- 3 Use opt-in rather than opt-out policies to give the shopper more control over data sharing.
- 4 Don't overemphasize promotional products.
- 5 Cross-reference products.
- 6 Ensure that images are big and show features that are important to buyers.
- 7 Put the search box on every page.
- 8 Make "All" the search default (so it searches the whole site).
- 9 Avoid jargon and clever or made-up names.
- 10 Have the customer select options before the product goes in the shopping cart.
- 11 Expect users to hit the Enter key when filling out forms.
- 12 Offer a toll-free number for placing phone orders.

ILLUSTRATION: E-COMMERCE USER EXPERIENCE BY JAKOB NIELSEN, NIELSEN NORMAN GROUP, PRESENTED BY CMC

As the nascent field matures, the following usability concepts are emerging as best practices:

**TRUST.** Customers must believe that a company will follow through on their orders, protect their private information and provide end-to-end transaction integrity. So the latest research focuses on how to foster trust through Web site design.

A recent study called "In Web We Trust: Establishing Strategic Trust Among Online Customers" from user interface expert Ben Shneiderman and researchers at the University of Maryland in College Park, looks for features that are best at inducing trust among online customers. "Web site designers should include extensive customer service information, provide phone numbers for technical support, clearly state the return policy and provide an address for merchandise return," the study says.

Designers should also include merchandise costs and shipping dates as soon as possible in the buying process, which Amazon.com does well, Nielsen says. Amazon may lose a few customers when shipping dates have to be extended, he says, "but because they're honest about it, you have the feeling that when you click to buy, you'll get the package."

Trust is "the ability to predict current behavior from previous experience," Spool says. "People don't care about privacy policies. In our tests, we found people didn't even read it, and those who did found it too arcane and confusing to understand."

Trust and transaction cost are the top concerns of online buyers, says Jungwon Lee, a researcher at Yonsei University in Seoul, Korea, in his report "Key Design Factors for Customer Loyalty User Experience in E-Commerce." For online stores, trust translates into profits, Lee says, because repeat customers spend almost twice as much per visit as new customers do.

Integrating back-office systems with the Web site promotes trust too, because then customers know what's in stock, Nielsen says. "If your existing system won't do it, put it on the wish list for updates," he says.

At both Macys.com in San Francisco and Lands' End Inc. in Dodgeville, Wis., inventory systems are tied to company Web sites — in real time.

"It's extremely tough to do," says Kent Anderson, president of Macys.com. "But when you're running 70,000 [items] through a Web site, it's important."

The integration was part of a July redesign. "Online sales through the fall season doubled," Anderson says.

**CATEGORIES.** To move customers quickly from the home page to the product page they want to see, the pages in between must be explicitly named and well differentiated.

To find sweaters at Macys.com, you have to know they're under the "tops" category, Spool points out. On LandsEnd.com, they're a separate listing. "Lands' End sells five times as many sweaters as Macy's," he says. "And it's because of the design of the site."

Design gurus offer advice on how to help online shoppers navigate sites and find the products they want to buy. By Sami Lais

# How to Stop Web Shopper Flight

Examine your logs to see the words users type into your search engine. Users enter their "trigger words" so that they want to know or find — and those are the words to use as category names, Spool says.

**SEARCH.** Put the search box at the top of every page, Nielsen says. Make it tolerant of misspellings and accepting of common synonyms. And set it to automatically search the entire site.

Usability studies show that if the first search fails, odds sharply decrease that users will find what they want, says Nielsen. With a good search engine, people will buy twice as much because they can find what they want faster.

**PRODUCT PAGES.** The pages that sell the most products are the ones that show the most products and have the biggest pictures, experts say.

At Macys.com, shoppers can zoom in on product pictures to see a close-up of the fabric weave. "The trick is to capture the image at the appropriate density so it doesn't pixelate at the smaller size," says Anderson. "We spent a lot of time and effort on that."

One of today's prevalent myths is that if a page doesn't download within seven seconds, the customer goes elsewhere. Not true, says Spool. "People complain about the download time because they're having trouble completing a task," he says. Although faster is clearly better, when the content is something the user has asked for, studies show, that user is willing to wait. As proof, he points to companies that "made their sites faster but the complaints didn't go away."

Neither Nielsen nor Spool likes 3-D models, calling them difficult to operate and unconvincing. But Lands' End customers love the feature that lets them try clothes on a personalized model, says a Lands' End spokeswoman. "The average order value increased by 9% when a customer uses the model, and 15% of visitors launch the model," she says.

**NAVIGATION.** Designers must develop navigation and content together.

Many designers instead create a shell to give each page the same look and feel and navigational structure, no matter what content they pour into it. But shells require lots of generic links, Spool says. With generic links, users rarely get what they expect.

For example, people don't shop for sweaters the same way they shop for bathing suits, Spool says. "For sweaters, they want to see the fabric. Their concern with a bathing suit is how it fits on the body," he notes.

Lands' End handles those differences well on its swimwear page, he says, allowing customers to pre-select suits based on style, for instance.

Daily customer input helps shape the site, a Lands' End spokeswoman says. Profitable for the past four years, in fiscal 2002 the site surpassed the company's catalog in sales, she says.

## GOING GLOBAL

E-commerce sites that don't accommodate international shoppers may be throwing away half their potential sales.

**QuickLink:** 200322

**Blowdowns:** Part researchers say online users follow an "information state" in their search for what they want.

**QuickLink:** 200091

[www.computerworld.com](http://www.computerworld.com)

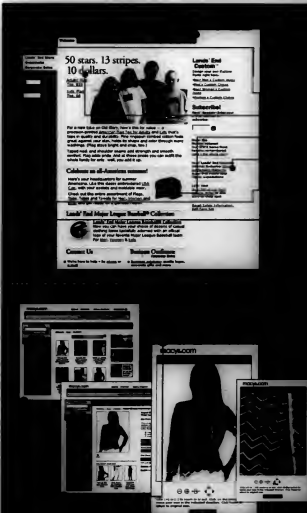
Spool also warns that usability tests of navigational links show that too many links on a page or links that are embedded in text are counterproductive.

Glitty Web animation is considered counterproductive too, but animation can be used to create dynamic forms that provide usability benefits. Hotelier, a Houston-based division of Webvertising Inc.,

uses Flash animation from San Francisco-based Macromedia Inc. to present a hotel reservation form on a single screen.

The only hard and fast rule, Nielsen says, is that there are no rules. ▀

*Lais is a freelance writer in Takoma Park, Md.*



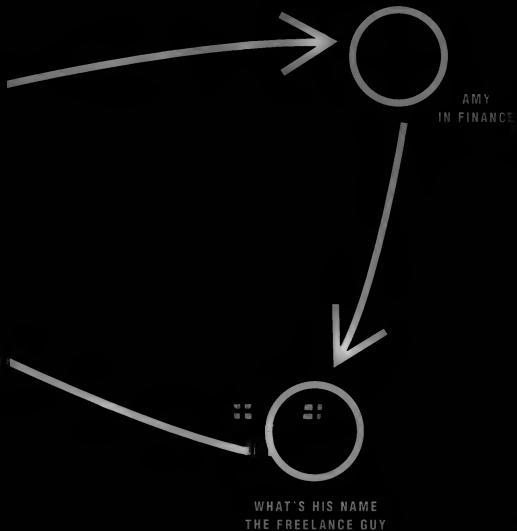
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NICHOLAS PIETRELLI

# Open Rules for E-Business

**I** WENT TO J.C. PENNEY the other day to buy some socks, when the strangest thing happened. As I attempted to step through the store entrance, my foot went flying upward into my face, forcing me to do a back flip and land on the sidewalk. The J.C. Penney store manager, who happened to be walking by at the time, explained that I couldn't enter the store as long

as I was wearing New Balance sneakers; the floor was compatible only with Nike.

Now, of course this didn't actually happen. It doesn't take a Harvard MBA to figure out how viable a business model this would be.

There are very few reasons why businesses would be motivated to let arbitrary incompatibilities limit customer access. That's why Microsoft was never able to turn the Web into an exclusive club for Internet Explorer surfers, despite concerted efforts to do so. Users of other browsers also have money to spend, and everyone knows it.

Does this bit of self-evident wisdom translate into a truism for e-business, particularly business-to-business transactions? Not yet — with an emphasis on the word yet. It's still perfectly reasonable to deliver proprietary solutions to large customers, or even to supply your large customers with a tool kit so they can build their own applications for doing e-business with you.

Eventually, however, many of you who rely on e-business are going to have to adopt a Web services approach in order to remain competitive. Fortunately, the economy is slowing the progress of this technology. You won't be left behind if you fail to rush into a Web services solution just for the sake of doing so. Be-

sides, in most cases, you shouldn't let technology drive your business strategy anyway.

But neither should you risk allowing your company's short-term technology strategy to drive away potential customers in the long term. Whether you want to admit it or not, that's the most likely scenario.

Our culture, particularly in the U.S., is largely a reactive one; for example, many of us don't adopt and configure systems to make them immune to viruses. We buy antivirus software, and even then we usually wait until a nasty one eats last month's budget.

Our reactive U.S. culture has impeded a bit since Sept. 11, although it's hard to miss the trumphy of a statement like that. Our sudden interest in being proactive is itself a reaction to the suggestion to which we might have been able to avoid the tragedy. I'm not sure that's a self-founded theory, but I'm happy to see people taking an interest in being more forward-looking.

So let's apply this attitude to e-business, shall we? I can think of at least three rules to follow:

## RULE NO. 1: Keep an "open" mind.

Even if your e-business strategy starts with one customer, I suspect that you won't want it to stay that way. If you build your technology around open standards, you're more likely to get that second customer. Even if you don't plan to open your business to millions of people with Web browsers, face the fact that proprietary solutions are on their way out and get with open standards and open source.

**RULE NO. 2:** Ignore technology endorsements by large companies. There was a time when you could make business decisions based only on the fact that IBM and Microsoft announced a partnership. On second thought, considering what happened to OS/2, perhaps even that memory is an illusion. Regardless, forget what vendors say about e-business technologies and commit to open standards. Keep your eye on eXML, for example ([www.ebxml.org](http://www.ebxml.org)).

**RULE NO. 3:** Hire that security guru now, before you build your e-business software infrastructure. It's not that you can't adapt to open e-business demands as an afterthought.

FedEx is a poster child for wrapping complex, proprietary back-end software solutions with simple Web applications. But FedEx invests about \$1.5 billion in IT each year. If you can match that kind of money, then by all means, make any decisions you like. You can afford to make strategic errors. If your budget is a bit smaller, however, it pays to plan ahead. I suggest you do so by making sure to keep an open mind while making plans for the future. ■



NICHOLAS PIETRELLI is a computer consultant and author in Hayward, Calif. He can be reached at [nicholaspietrelli@earthlink.net](mailto:nicholaspietrelli@earthlink.net).

## SNAPSHOTS

### B2B Forecast

Business-to-business e-commerce revenue could reach \$1 trillion in 2004



SOURCE: J. J. LAMARCA, "B2B: THE BIG PICTURE," MAY 13, 2002

### Favorite Tools

In developing e-business applications, which tools have you found most useful?



- Microsoft Visual Studio, .Net and BizServer tools
- BEA WebLogic server and tools
- IBM WebSphere server and tools
- Sun Platform server and tools
- Other

### BASE IT PROFESSIONALS AT THE COMPANIES

SOURCE: J. J. LAMARCA, "B2B: THE BIG PICTURE," MAY 13, 2002

### Active Surfers

Consulting firms' estimates of the number of Americans who regularly use the Internet (2000)



SOURCE: CONSULTING FIRMS' ESTIMATES, MAY 13, 2002



NICHOLAS PETRELEY

# Open Rules for E-Business

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- Sun JPlanet server and tools
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BASE: IT PROFESSIONALS AT 40 COMPANIES

SOURCE: CUTLER CONSTRUCTION APPLICATION, MARCH 2002

### Active Surfers

Consulting firms' estimates of the number of Americans who regularly use the Internet (2001):



SOURCE: CHARTERED BY NEW YORK, FEBRUARY 2002







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Software engineers to design, develop and test computer programs to business applications, analyze software requirements to determine feasibility of design, direct software systems development, coordinate software development, test, install, and maintain software systems. Requires Bachelor's Degree in Computer Science or related field and two years experience as a software engineer or equivalent. Minimum knowledge of Grand Discoverer, JavaScript, UML, and PL/SQL. Salary \$68,000/year. Working Conditions: 8:00 A to 5:00 PM, 40 hours/week. Domestic travel required and frequent travel to client sites. Employer: Spherion, 10000 Highway 101, Suite 100, Mission Viejo, CA 92690. EOE. Ref: 21033 NMS Job, Success Path: 10510-3867. Job No.

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FRANK HAYES/FRANKLY SPEAKING

# Microsoft's Tall Order

I'VE BEEN LOOKING for ways to help Microsoft's programmers get focused on security. Not just because the company last week announced yet another batch of security holes in its products—including a vulnerability in Internet Explorer that Microsoft called "critical"—but because I figured something that works for Microsoft will probably work for programmers in corporate IT shops, too.

Unfortunately, it looks like Microsoft's corporate commitment to security über alles won't be enough. Even sending 7,000 programmers to class for a quick security training refresher isn't likely to do it.

That's because programmers have a hard time changing. A really hard time.

Watts Humphrey found that out the hard way. Humphrey is the guy behind the Capability Maturity Model—as in the "CMM Level 5" that software development outsourcing likes to brag about. CMM, which Humphrey developed at Carnegie Mellon University's Software Engineering Institute, is both a way of gauging how good an organization's software development process is (from Level 1 up to Level 5) and an approach to making it better.

But before CMM, Humphrey spent 27 years at IBM, where for a time, he managed all IBM commercial software development and banged his head against the problems of improving quality and on-time delivery at what was then the world's biggest software vendor.

According to Humphrey's own account in a series of 1998 articles for the software journal *CrossTalk*, when he took on IBM's thousands of programmers, every programmer was heads-down and focused just on coding and testing—and every project was in trouble and behind schedule.

Any similarity to Microsoft's quality and delivery troubles is no coincidence.

Humphrey quickly discovered that just telling programmers and managers to use better practices, or even telling them that better practices were now the No. 1 priority, wasn't enough—because the better practices weren't used.

That problem wasn't just at IBM. Here's Humphrey talking about a later effort to improve practices: "One manager even told his people that it was more important for them

to use these methods than to meet their project schedules. The engineers all said they would do so, but none of them did."

And why not? Humphrey finally figured it out: "Engineers only believe new methods work after they use them and see the results, but they will not use the methods until they believe they work." In other words, reminders aren't enough. Training isn't enough. Even sincere and enthusiastic management support isn't enough. Programmers believe they know best how to do their work. They don't believe other approaches will work until they've used them successfully. And that usually means they must be forced to use them.

At IBM, it took an absolute management decree that no software project would continue until the new methods were actually being used. In later efforts at the Software Engineering Institute, Humphrey found he actually had to pull teams of programmers off their day-to-day jobs and put them through a rigorous hands-on training course to get them to change their ways.

That's what Microsoft is facing if the company really means to improve security in its products. It will take more than a day of classes for each programmer, more than a serious management commitment to its Trustworthy Computing initiative. It will require deep, well-designed training and rigorous, even radical changes in how every software project is managed.

The good news for Microsoft is that even if the cost of these changes is as much as \$100,000 per programmer, the company has money in the bank to pay it. It'll be tough, but if Microsoft is willing to pay the price, it can be done.

The bad news? The rest of us don't have that kind of money lying around this year—and we'll have to look for a cheaper way to deal with our software security problems. ▀



## SHARK TANK

AFTER AN HOUR on the phone trying to get a user's laptop to boot, tech-support pilot fish is stumped. "Bring it into the shop Monday morning," he sighs. OK, user says, then has an afterthought, asking, "Does it matter if I might have called on it?"

NEW POLICY calls for a monthly purge of all e-mail more than 30 days old, as admin pilot fish explains to users how to archive e-mail. "Two months later, one of the worst abusers—a lawyer with more than 10,000 e-mails in her in-box—calls us, howling about all the e-mail she lost," says fish. Why didn't you archive it? he asks. She yells, "I didn't know you were going to do this every month!"

SPEC FOR this new project reads: "The search engine will search the database for the keywords submitted. If it does not find them the first time, it will try again three more times." What's wrong with that? project manager asks when developer pilot fish objects. "It's really didn't get it," grumbles fish. "That if I couldn't find them the first time, it won't find them the next."

"I'VE GOT this virus, and I don't know what to do about it," user wails to tech-support pilot fish. Fish is puzzled—he personally had set up user's PC to automatically run maintenance functions, including antivirus updates. "What happened?" he asks.

"Well, I got tired of those annoying messages telling me that there was an update for the virus software," user says. "So I just popped around in there and figured out a way to turn it off."

USER IS trying to install software from a CD, but her PC can't read the disk, she tells help desk pilot fish. First, take the CD out of the drive, fish tells her. You put the CD? puzzled fish asks. "In the slot at the top of the computer," she says—and then flips the computer over and shakes the CD out of the slot.

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